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STACKS

Amend the Wage and Hour Law

The South abounds in opportunity and resources. It presents an outlook for new wealth creation beyond any other section. Its climate and labor make it ideal as a location for decentralized industry. But progress is handicapped by arbitrary increases in the cost of doing business, and this applies especially to small Southern industries employing unskilled labor.

Some "reform" measures are making it hard for them to live. Whatever may be claimed as the purpose of the Wage and Hour Act, it is placing an embargo upon such enterprises that in many cases is insurmountable.

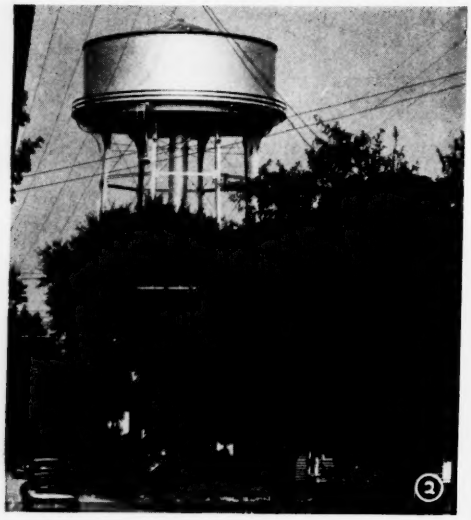
This does not refer to sweat shops such as are found in crowded industrial areas of the North, but worthy enterprises deserving encouragement; neighborhood industries giving needed work in communities endeavoring to develop the markets and mutual interests of industry and agriculture, and a variety of small concerns turning out needed products. As a matter of fact, the Wage and Hour Law is another tax upon all industry and a deterrent to progress.

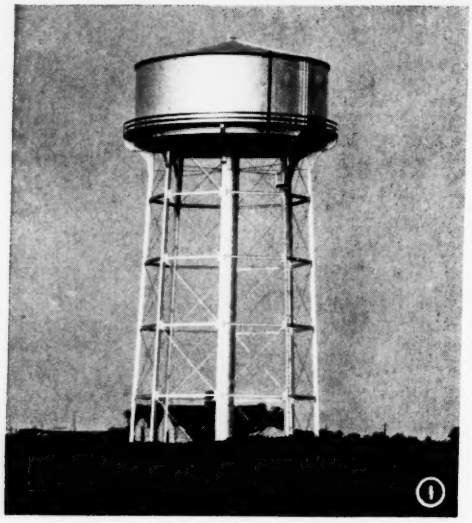
Skilled labor in most cases already being paid beyond the minimum requirement finds its income reduced by shorter hours. Instead of increasing employment the result of this law, inevitably, as an imposed restriction placed upon enterprise during hard times, has been to add to unemployment and to production costs.

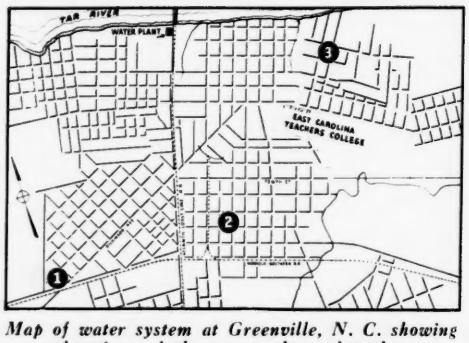
The obligation is upon Congress to make the changes and adjustments that are so clearly needed.

May
1939

When are THREE tanks better than ONE?







Map of water system at Greenville, N. C. showing locations of three new elevated tanks.

The answer is ....When a city needs distributed storage in its water works system

Three tanks are better than one when you have three areas in a waterworks system with heavy demands. A tank near the center of each of these areas will fill during the night or at other periods of low demand. Then at peak periods the reserve in the tank will supply the increased needs of the section.

The three new tanks installed at Greenville, N. C. illustrate how this works out. They are identical radial-cone structures of 300,000 gals. capacity each except that the tower heights are varied so that they all operate in the same hydraulic plane.

The location of each tank is indicated on the map of the distribution system at the left. Since they have been in service, a normal pressure of approximately 45 lbs. per sq. in. is maintained throughout the system, even during periods of heavy demand.

Whenever making waterworks improvements, determine which is most effective—a large capacity tank at a central location or several installations distributed throughout the system. We will be glad to submit estimating figures.

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MANUFACTURERS RECORD

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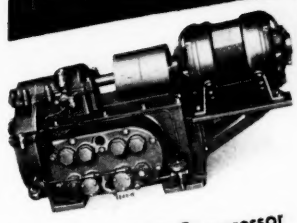

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A LONG STRIDE TOWARD GOVERNMENT CONTROL OF ALL ACTIVITY

Using the authority held by Congress to regulate interstate commerce there is being turned over to Federal Bureaus the control of production, and in various ways what amounts to the control of all forms of business.

It has been decided by the highest court that the AAA cannot prevent a farmer from raising what he wants and as much as he wants, but he can be prevented from selling any of his products entering into interstate commerce which go beyond a quota fixed by the AAA. The farmer or any wholesaler that handles the farmers' crops in excess of the quota will be guilty of a misdemeanor and liable to punishment.

Associate Justice McReynolds, in his dissenting opinion, said:

> "The present decision and the reasoning offered to support it will inevitably intensify bewilderment. The resulting curtailment of the independence reserved to the states and the tremendous enlargement of Federal power denote the serious impairment of the very foundation of our federated system. Perhaps the change of direction, no longer capable of concealment, will give potency to the efforts of those who apparently hope to end a system of government found inhospitable to their ultimate designs.
>
> "Manifestly if such attenuated reasoning—possibility massed upon possibility—suffices, Congress may regulate wages, hours, output, prices, etc., whenever any product of employed labor is intended to pass beyond state lines—possibly if consumed next door.
>
> "Producers of potatoes in Maine, peanuts in Virginia, cotton in Georgia, minerals in Colorado, wheat in Dakota, oranges in California and thousands of small local enterprises become subject to national direction through a board."

If you tell a man how much he shall sell, what he shall pay to produce what he sells, how many hours his employes can work, you limit his profits and practically tell him the prices at which he can sell.

If you can limit the sale of cotton, tobacco, rice and wheat you can limit the sale of all crops and animals and all products of the farm. You can likewise limit the sales of business establishments, for there are very few businesses which do not, either in buying or selling, enter interstate commerce.

What becomes, then, of individual effort and energy and initiative under what so clearly points to regimentation and control is another question. The graciousness of the New Deal boys who have put it over may supply the answer. But the purpose is to "control." Make no mistake about that.

As we see it—

IT looks as if business is getting better in spite of war scares, the coal strike, the AAA bill limiting production, which it finally got through, and a lot of things in the mix-up of "planned economy."

The demands of this greatest of all markets continue to pile up and will take a lot of filling. Maybe business will set about the job, face the discouraging factors and move ahead. It's the only way to bring us out.

There's a vast fund of unused credit available when business starts to borrow. Four billions of *excess* reserves in Federal Reserve banks, left there without interest by member banks because of no demand. The largest sum of record.

Rates are apt to stay low too. Money prices must be kept in line with the low yield on government bonds if the market is to be sustained, and that is necessary for future borrowing.

THE business picture is a puzzle. Secretary Hopkins says, or somebody in the Commerce Department says it for him while he is sick, "something must be done to tempt 'venture' money into the channels of trade." Sure, that's what most of the sane people of America have been saying for several years. Lammot duPont said it to a Senate Committee a long time ago and gave figures to show what industry would spend if encouraged. A staggering sum—far beyond what government can spend even if it keeps up its heart-breaking borrowing pace until there is nothing left to borrow—but nothing has been done about it. Wendell L. Willkie has said repeatedly what the utilities would spend if let alone. Why not try it out?

WHEN Mr. Hopkins' name was sent up for Secretary of Commerce, a member of the Committee asked him about his qualifications as a business man. His reported reply was he might fit in that category as he had "spent nine billions of dollars." Ye gods! And now they are "investigating" WPA to learn where the money went. Mr. Lasser has testified part of it financed his trip to Russia!!

Why was Mr. Lasser permitted or authorized to go to Russia at taxpayers' expense? Was it to learn that WPA workers have a "right" to organize, strike for more pay and hours similar to workers engaged by private industry, and threaten a march on Washington if employment is curtailed? Hardly. Workers don't do that way in Russia.

This "business of relief" is playing up the idea of "rights" pretty strong. What a bunch of saps there is in Congress and among the rest of us to put up with such twaddle. It's like the misuse of "liberty" when "license" is meant. If we are to preserve even the shell of democracy it will be well to reabsorb promptly the idea that the only "right" we have is to pursue our individual way without interfering with anybody else. And it might be added the "right" to pay for the support of government, but by no stretch of the imagination a "right" to demand or expect that government shall pay for our support.

THE flight from Baltimore to England and the Continent of a great 70-passenger airship made history in trans-atlantic travel during April. Regular service is promised when government approval is given. While the time schedule has not been announced, it will be probably twenty hours or less to England and France. The people of the world thus are being brought into closer and more intimate contact. All of which, tremendous as are the possibilities for good among nations, brings us face to face with our nearness to war if or when it starts.

It may be, however, on the brighter side modern transport will prove a way to better understanding of other people's problems and on their part a fuller appreciation of the American viewpoint. Closer acquaintance oftentimes breeds mutual respect.

DR. Millikan of the California Institute of Technology, one of the world's foremost scientists, who also has the talent of talking in terms the layman can understand, used the occasion of a recent address to explode the idea held by many that invention of new and improved machines increased unemployment.

There may come a pause in the affairs of the individual while adjustment is taking place, but in the end, and it always has been so, the work of the scientist leads to betterment of human conditions. More pay, better hours, employment of more wage earners per thousand of population—this has been the unvarying rule over the years.

In discussing "The World of Tomorrow," Dr. Millikan presented a vividly optimistic view of the conditions of life in the next fifty years if an imposed economy does not put too many barriers in the road.

The higher education of tens of thousands of American youth in recent years will inevitably fail in large part of its purpose if it does not find expression through private industry. It was not intended by parents, paying often what they could ill afford that their sons might be educated, that they should become some day creatures of a state directing their activities.

As we see it—

A NOTABLE address was delivered recently before the Mississippi Bankers' Association at New Albany, Miss., by Judge W. M. Cox. Space, unfortunately, will not permit its reproduction.

Confessing his embarrassment in the selection of a theme upon which to address bankers, he decided to frame his remarks upon current matters of universal interest as "the world is in a major crisis; it is in the throes of a mighty revolution in thought, in social order and in institutions of government. The whole of humanity is, seemingly, being impelled by irresistible forces to some great consummation, perhaps to some tremendous catastrophe."

Outlining conditions in totalitarian states and comparing the absence of freedom of the individual with the liberty that America has enjoyed, Judge Cox does not hesitate, however, to say:

> "But our greatest danger is not from abroad. The virus is in our own system. We have much to say against the totalitarian state. We inveigh loudly against dictators, we denounce in unmeasured terms the Fascist, the Nazis, the Bolshevists. We prate much of our devotion to democracy and civil liberty. But much of this seems to be only from the lips out. We ourselves are doing the things that, if persisted in, will destroy the liberties of the American people and end in unmitigated despotism. We ourselves are doing the very things that pave the way for dictatorship. We are centralizing power in Washington to the vast aggrandizement of Federal power, especially of the executive department, creating a great number of deputy-presidents, men of slight experience in government, not specially distinguished for wisdom, who are puffed up with a little brief authority, who are arbitrary in the exercise of power, and seem to be responsible to nobody. The states are being steadily reduced to desuetude and impotency. When they pass, the United States will become a thoroughly consolidated totalitarian state. The people will then belong to the government, and not the government to the people. Without effective state government in full possession of the great field of internal police, it will be impossible to maintain constitutional government and democratic freedom. We are witnessing an enormous invasion by the Federal government of the sphere of internal police and of the reserved rights of the states and the people. This by virtue of a very broad construction, by Congress and the President, of the general welfare clause and the interstate commerce clause of the Federal Constitution. Under these clauses as they are now construed by two departments of government, the Congress and the President can do whatever they may wish to do, unhampered by constitutional limitations, for do they not claim that all Federal legislation is to promote the general welfare? And does not every human activity have some relation to inter-state commerce? It is idle to expect the Supreme Court to save us from this revolutionary trend. Courts can be packed, and they can be brow-beaten and intimidated. No court can be expected to stand forever against the legislative and executive departments of government, and certainly not against a strong and persistent popular demand. This would be to invite their own destruction.
>
> "Assurance has been given to the so-called underprivileged one-third by our Federal government that, come what may, they will not be permitted to suffer, that the government will see that, in any event, they shall have food, raiment, shelter and a fair share of the abundant life. This is rather a large undertaking. It is a thing which the Lord God Almighty has never done for any nation. He either could not, or He would not. If this be the proper function of government—a thing which many great philosophic statesmen deny—it falls within the police power of the states, where it could be more effectively and safely exercised."

Expressing the feeling that prevails in the minds of many, Judge Cox further says:

"There is one great field yet left in the jurisdiction and control of the states, and of their people, the field of popular education. If there is any human right of transcendent importance, which should never be surrendered nor compromised, it is the right and duty of parents to control the discipline and education of their children, and of the people to have their children educated in schools provided, directed, and controlled by themselves, or by their local states and communities. The Federal government should be forever excluded from this sphere. It is with gravest apprehension that I view the widely concerted effort to induce the Federal government to interest itself in this work. A strenuous demand is now being made that the Federal government subsidize the public schools by immense donations for their support. This demand, I think, proceeds upon the theory that secular education of the masses will insure civil liberty and the perpetuity of our free institutions. That this is not true Germany alone is ample proof. That great despotism has perhaps the highest level of universal popular education in the world, yet the German people submit tamely to the extremest exercise of despotic power. I object most earnestly to the proposed subsidies for many reasons. * * *

"I object again because Federal support of schools to any substantial extent implies Federal control. It is an axiom in politics that, where Federal money goes, Federal control will follow. I fear Federal control of popular education because it will mean a standardized education."

The statesmen from Mississippi who represent the interest of that commonwealth in Washington; the statesmen from every commonwealth in the Union and the people of America will do well to give thought to the warning.

Announcement

GOVERNOR OF NORTH CAROLINA

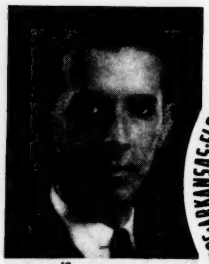
GOVERNOR OF LOUISIANA

GOVERNOR OF GEORGIA

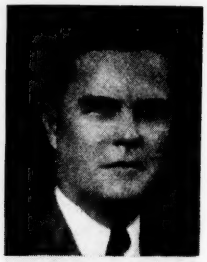
GOVERNOR OF FLORIDA

GOVERNOR OF MISSISSIPPI

GOVERNOR OF SOUTH CAROLINA


GOVERNOR OF TENNESSEE

GOVERNOR OF ARKANSAS


GOVERNOR OF ALABAMA

GOVERNOR OF OKLAHOMA

GOVERNOR OF TEXAS

TEXAS AND OKLAHOMA JOIN

SOUTHERN GOVERNORS CONFERENCE

The Southeastern Governors Conference announces the addition to the conference of the Governor of Texas and the Governor of Oklahoma. The name of the conference has been changed to Southern Governors Conference.

Southern Governors Conference

Bona Allen Building, Atlanta, Georgia

LAWRENCE WOOD ROBERT, JR., Executive Director **CARROLL DOWNES**, Industrial Consultant

The Opportunities in South Carolina for Industrial Development

SOUTH CAROLINA—the Palmetto state and one of the original thirteen—though originally visited by the Spaniards about 1520, was first settled by a group of French Huguenots at Port Royal in 1562. However, their stay was brief for in 1563 they were massacred by invading Spaniards and the few who escaped returned to France. More than a hundred years then elapsed before the next settlement, for while the territory now comprising South Carolina was a part of the land granted by Charles I to Sir Robert Heath in 1629, a grant which he failed to utilize, it was not until 1663 that Charles II made a second grant of the region to the Lords Proprietors and increased the area in 1665 to include what is now the two Carolinas. It is interesting to note that almost from the beginning this entire area was governed as two colonies—Albermarle the north, and Clarendon the south, named for two of the Proprietors—and governed under a constitution formulated by John Locke. The first English colony was established at Charleston on the Ashley River by William Sayle and his followers in 1670. Ten years later the site was moved to the present City of Charleston.

To South Carolina belongs the distinction of having been the first colony to adopt a provisional constitution in 1776 and, with the exception of Massachusetts, contributed more money to the War of the Revolution than any other province.

Ranking 39th in size with a total area of 30,989 square miles of which only 494 square miles is water area, South Carolina ranks 26th in population which in 1937 was estimated at 1,868,000.

Climate

THE climate of South Carolina is sub-tropical, characterized by long summers and mild winters. The rainfall, which is fairly evenly distributed throughout the year, averages slightly over 48 inches for the state as a whole. July and August are the wettest months with an average of 5.87 and 5.75 inches respectively, while the driest months of October and November average 3.02 and 2.33 inches each.

The average annual temperature of 62.9° Fahrenheit ranges from 45.5° Fahrenheit average in January, to an average of 79.8° Fahrenheit in July. The first killing frost seldom occurs before the first week of November and the last frost usually takes place before April. The average growing season of 235 days ranges from 191 to 253 days.

Transportation

SOUTH CAROLINA is well supplied with transportation facilities of a varied character. Passenger and freight railroad service is available in every one of the state's 46 counties and operates over more than 3,500 miles of track. Except in the immediate coastal and extreme highland Piedmont regions, there are few areas of the state where railroad facilities are not available within a radius of about 5 or 6 miles. Over 3,000 miles of the railroad trackage is operated by six Class I roads.

The state highways consisting of 7,380 miles of which 5,500 miles are hard surfaced, supports a well developed transportation system. In addition to a number of truck lines there are 12 companies operating bus lines for passenger and freight service including three major trans-continental lines.

Inland water transportation is available at present on the Savannah River to a point slightly above Augusta, Ga. Other rivers have been set aside for commercially navigable purposes and at least two rivers—the Peedee as far as Bennetsville, and the Santee as far as Columbia—have been projected, but are not yet completed for commercial navigation. However, one company has already made arrangements for their own barge service for the transportation of pulpwood to their plant from the hinterland.

Charleston, South Carolina's principal ocean port, is served by 22 shipping lines beside 6 coastwise lines, and has 39 wharves and drydock, shipbuilding and repair facilities. Ships can pass from bar to berth in 30 minutes and entrance to the channel can be made by day and night. At no point is the channel less than 400 feet wide or 30 feet deep. Numerous truck lines and three railroads connect the port with all inland points. The value of all imports and exports through Charleston in 1937 was $121,844,217 and included 1,938,864 tons of imports and 544,289 tons of exports.

The three commercial airline routes crossing South Carolina directly connect this state with virtually every part of the country, besides providing a rapid means of transportation to different points throughout the state. There are 28 airports and landing fields strategically located in South Carolina.

Manufactures and Finance

THE total value of South Carolina's manufactured products in 1937 was $409,911,517, an increase of $112,755,109 or nearly 38 per cent over the $297,156,408 value for 1935. Among the industries separately listed by the census report, 23 have products annually valued in excess of a million dollars, the most important of which are: cotton woven goods, $216,800,565; rayon broad-woven goods, $25,125,646; cotton fabric dyeing and finishing, $24,418,067; cotton yarn and thread, $19,744,146; lumber and timber products, $17,066,532; fertilizers, $13,204,201; cottonseed oil, cake and meal, $11,106,405; non-alcoholic beverages, $5,605,170; and paper, $5,169,636.

The cost of materials, fuel, electric energy and contract work utilized in the 1,193 establishments, each having an annual output in excess of $5,000, was $234,433,365, while the 129,748 wage earners had a payroll amounting to $91,791,692. According to the State Department of Labor, the amount of capital invested in all industries in 1938 was $393,256,013. Textiles ranked first with $198,987,588; electricity was second with $116,413,826; and pulp and paper third with $20,183,273. Between 1935 and 1937 the number of establishments was increased by 72 and no county has less than six plants.

The aggregate resources of the 150 South Carolina banks reporting to the Comptroller of the Currency June 30, 1938, was $144,528,014. Capital stock, including capital notes and debentures, amounted to $9,557,724 while individual deposits totaled $126,970,331. Bank clearings as represented by reporting exchanges in 1937 were $236,774,000. Total internal revenue collections for the calendar year 1937 were $11,086,434.

Agriculture

ALTHOUGH from a cash income standpoint manufacturing is the greatest contributor to South Carolina's economic life, agriculture still remains the largest employer with 52.7 per cent of the population. Cash farm income in 1937 amounted to $112,280,000, representing an increase of nearly six million dollars over the previous year. Of this sum, $87,336,000 was the cash income derived from crops grown on 5,214,000 acres. Cash income from livestock and livestock products was $17,363,000. Cotton was the largest single crop and yielded 1,023,000 bales of lint from 1,695,000 acres and produced a cash income of $39,200,000 in addition to $8,600,000 from 455,000 tons of cottonseed. Tobacco came a close second with 106,275,000 pounds from 109,000 acres yielding a cash income of $21,025,000.

Other important crops are: peaches, 1,080,000 bushels; corn, 24,945,000 bushels; peanuts, 7,865,000 bushels; oats, 10,076,000 bushels; and sweet potatoes, 5,130,000 bushels. Truck crops brought an estimated income exceeding $4,000,000.

Agricultural products noted on the map are also grown in small quantities in other counties. Besides those crops already mentioned, South Carolina produces a large quantity of pecans, strawberries, grapes, plums, pears, figs, apples and rough rice.

The number of livestock in South Carolina in 1937 was 1,111,000, valued at $48,076,000, the largest proportion being cattle numbering 352,000 with a valuation of $9,322,000.

Fisheries

THE five coastal counties of South Carolina, while comprising only about 187 miles of general coast line, nevertheless have a tidal shore line in excess of 750 miles and consequently are capable of supporting fisheries of a commercial character, the catch in 1937 amounting to 7,165,600 pounds, of which 5,259,900 pounds were shellfish.

There are many acres of natural clam, oyster and scallop beds which will be developed further upon completion of a survey to determine suitable bottoms with proper water salinity. The principal species caught are shrimp, oyster, shad, terrapin, sturgeon, clams and crabs. Large quantities of menhaden are caught under South Carolina license, but most of it is landed or shipped to adjoining states.

Timber

APPROXIMATELY 10,732,000 acres or 65 per cent of South Carolina's entire land area is in forest land. The total area of sound saw timber amounting to 10,692,000 acres, is made up of 7,802,000 acres of softwood and 2,890,000 acres of hardwood (including cypress). The total area of merchantable timber is 6,204,000 acres, of which 4,412,000 acres are softwood and 1,792,000 acres are hardwood. On this latter acreage the saw timber totals 29,757,000,000 board feet including 18,982,000,000 board feet of softwood and 10,775,000,000 board feet of hardwood. Among softwoods, old growth comprises about 25 per cent, while old growth hardwoods amount to almost 66 per cent. The average stand per acre is 4,706 board feet, or 4,065 board feet for softwood and 6,172 board feet for hardwood.

In the area of merchantable timber, Southern yellow pine comprises almost 90 per cent of the softwoods, while oaks, red gum, tupelo and black gum are the predominant specie in fairly equal quantity among the hardwoods with a good quantity of yellow poplar included.

The total stand on the merchantable forest area on a cordage basis is estimated to be in excess of 120,000,000 cords, 65,000,000 cords of softwood and 55,000,000 cords of hardwood. The average stand per acre is 12.2 cords or 9 cords of softwood and 20.8 cords of hardwood. The present drain per year of 4,189,000 cords compares with the annual net growth of 4,314,000 cords.

During the past ten years approximately 68,000,000 trees have been planted to reforest about 75,000 acres in South Carolina. In the present season more than 12,000,000 trees have been shipped, adding some 12,000 acres more at the rate of 1,000 trees per acre.

The principal kinds of wood used in the manufacture of pulp and paper are Southern pine, gum and yellow poplar.

Production of sawed lumber in 1936 totaled 637,580,000 board feet of which 498,812,000 board feet was softwood and 138,768,000 board feet was hardwood. The value of lumber and timber products in 1937 amounted to $17,066,532, the cost of materials, etc., used therein being $7,018,166 while the 11,015 wage earners employed in the 231 establishments engaged in the industry received $5,254,946.

In addition to other forest industries, South Carolina also has a large naval stores industry, the production in the season 1937-38 being 15,044 50-gallon barrels of turpentine and 52,067 500-lb. barrels of rosin. On the accompanying map is shown those counties in which naval stores are produced, but this refers only to stills, whereas trees are tapped in nearly all counties except those in the northwestern section of the state.

Mining and Minerals

SOUTH CAROLINA'S geological history is such that the occurrence of metallic mineral wealth is not likely to approach the quantity or value of non-metallic minerals.

Included among the non-metallics are barite, clay, mica, sand and gravel, and stone.

Barite, which is mined in Cherokee county, is used in the manufacture of lipthopone and barium chemicals.

Clay, in commercial quantities, is found in many parts of the state suitable for brick and tile, while other clays can be used in the manufacture of pulp and paper.

Granite in both slab and crushed form is available in many counties, as also is sand and gravel.

Spodumene and ryanite are found in the state and production may be possible after further exploration, while prospecting and development work on rock phosphate deposits which have been proceeding for the last two years may also have satisfactory commercial results.

Both lode and placer production of gold is carried on with both silver and copper also being recovered. During 1938 production of gold amounted to $373,500, most of this coming from the Haile Gold Mine near Kershaw, a mine which was operated during the World War for the production of pyrite to use in making sulphuric acid.

The total value of mineral production in South Carolina in 1936 was $2,551,571.

Electric Power

THE total generating capacity of power plants in South Carolina at the close of 1937 was 632,882 kilowatts. Twenty-three of the 39 plants, operated by 15 companies, were hydro-electric capable of producing 488,240 kilowatts; 9 steam power plants had a capacity of 125,492 kilowatts; 5 internal combustion engine plants were capable of 1,560 kilowatts; and two combination plants with a capacity of 17,590 kilowatts.

Production of electric power by public and private plants in 1937 totaled 1,746,856,000 kilowatt hours. Of this amount, 1,614,597,000 kilowatt hours were produced by water power plants and 132,259,000 kilowatt hours originated from fuel operated plants.

Primary power used in manufacturing at the time of the last census was 527,326 horsepower, and consisted of 134,969 horsepower from steam engines, 61,888 horsepower from steam turbines, 293,308 horsepower from motors driven by purchased energy, 2,065 horsepower from internal combustion engines, and 35,096 horsepower from water wheels and water turbines.

Taxation

DOMESTIC corporations doing business in South Carolina are subject to corporation income tax at the uniform rate of 4½ per cent on the entire net income. Foreign corporations pay the same percentage on such of their income as is attributable to business done within the state. In addition, domestic corporations pay an annual tax of two mills on each dollar paid to the capital stock with a minimum of five dollars. Foreign corporations also pay two mills on each dollar of the value of property used in the state. Transportation and utility companies are subject to an annual tax of three mills on the gross income earned within the state and four mills on each dollar of the true value of property owned and operated in South Carolina.

There is a license tax of 5/10 of one per cent per kilowatt hour of electricity manufactured, generated or sold.

The construction tax is graduated according to the size of contract. The school tax is three mills on all taxable property and all real and personal property is taxable.

The assessed value of all taxable property in 1937 was $363,333,000.

Labor and Wages

THE population of South Carolina, which contains next to the smallest percentage of foreign born among all the states of the Union—0.6 per cent—has a density of 57 persons per square mile and only 21.3 per cent of the entire population are classified as urban. The colored race comprises 45.6 per cent.

The uniformity of a widely distributed population is gleaned from the fact that there are only two cities in the state with a population exceeding 50,000, and the 20 townships in excess of 10,000 each are divided among 16 of the state's 46 counties. Similarly, 55 cities or towns with a population between five and ten thousand are distributed among 32 counties, and 231 towns with a population between one and five thousand are evenly distributed among all 46 counties.

Labor, of which there is an adequate supply, is loyal, willing and intelligent, while wage rates though differing considerably in various industries are comparable with those prevailing in the adjoining states.

NORTH CAR
GEORGIA
GREENVILLE
SPARTANBURG
CHEROKEE
PICKENS
OCONEE
ANDERSON
Anderson
LAURENS
UNION
YORK
Rock Hill
CHESTER
LANCASTER
FAIRFIELD
KERSHAW
NEWBERRY
Newberry
ABBEVILLE
GREENWOOD
McCORMICK
SALUDA
LEXINGTON
RICHLAND
Columbia
EDGEFIELD
AIKEN
CALHOUN
ORANGEBURG
Orangeburg
BARNWELL
BAMBERG
ALLENDALE
COLLETON
HAMPTON
JASPER
Gaffney
Union
Greenville
Spartanburg
Greenwood
Southern
Atlantic Coast Line
Seaboard
Charleston & W. C.
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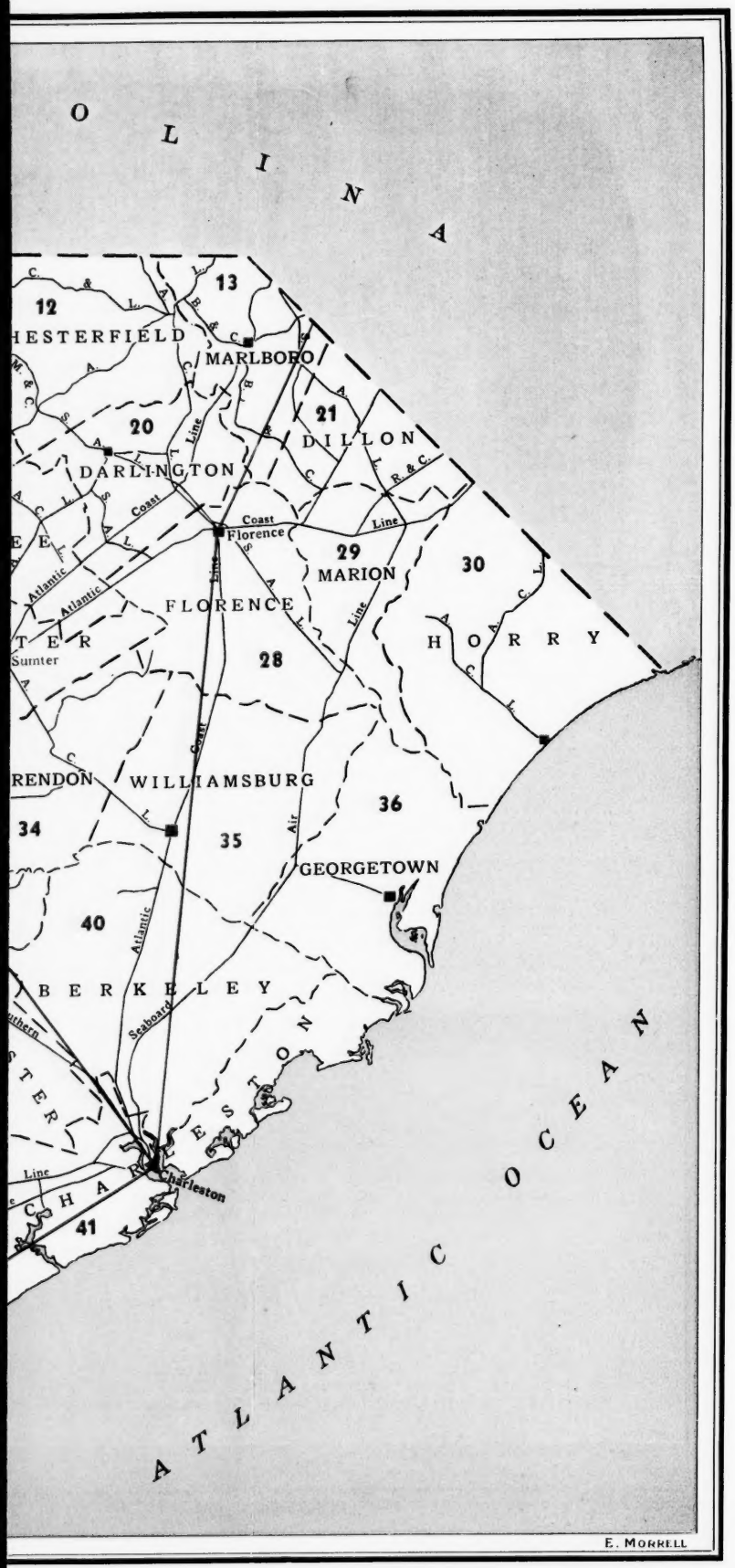


SOUTH CAROLINA

Its principal raw materials and transportation facilities, with facts on the reverse side pertaining to its industrial growth and opportunities for industry.

Mineral Counties in which mineral is commercially produced

Barite—5
Clay (brick and tile)—25, 27, 39
Gold—5, 6, 11, 14, 22
Granite (crushed)—3, 4, 8, 16, 17, 18, 23, 25, 26
Kaolin (sedimentary)—25, 26, 31
Limestone—5
Sand and gravel—2, 11, 12, 13, 25, 26, 31, 41, 43

Timber

Bottomland hardwoods—12, 13, 18, 20, 21, 26, 28 to 30, 32, 34 to 36, 38 to 41, 43 to 45
Loblolly pine—hardwoods—8, 9, 10, 12, 13, 15 to 34, 36 to 45
Longleaf pine—11, 12, 18, 19, 20, 25, 26, 27, 30, 31, 33 to 45
Mountain hardwoods—2
Shortleaf pine—hardwoods—1 to 12, 14, 15, 17, 18, 22
Virginia pine—hardwoods—2, 3, 4

Naval stores—12, 18, 25, 26, 28, 31, 32, 34, 36 to 40, 42 to 46

Commercial fisheries—30, 36, 41, 43, 46

Agricultural products

Corn—all counties
Cotton—all counties
Peanuts—7, 8, 11, 13, 16 to 19, 21, 23 to 26, 28 to 33, 36 to 46
Soy beans—1 to 21, 23 to 46
Sugar cane—19 to 21, 23 to 25, 27 to 35, 37 to 46
Sweetpotatoes—all counties
Tobacco—12, 18 to 21, 27 to 30, 32, 34 to 36, 38 to 40, 43, 46

———Railroads
———Navigable Rivers
———Airlines
■ Airports—also at principal cities printed in red

South Carolina: the center in a 700 mile radius of the greatest markets of the country.

SOUTH CAROLINA invites INDUSTRIES

THERE are many sound reasons for choosing South Carolina as an ideal location for your industrial plant. This state invites responsible business men and investors to consider South Carolina's matchless climate, its modern rail and highway transportation facilities which adequately serve every county; the types of manufactured products now being produced, the products of its farms, forests and waters.

Its commercial minerals are available for a variety of industries as shown on the map of South Carolina published in this issue of the MANUFACTURERS RECORD. Its public and private electric power plants are prepared to give new industries every cooperation. South Carolina has an adequate supply of labor that is loyal, willing and intelligent.

THE STATE OF SOUTH CAROLINA

The State Government of South Carolina will gladly cooperate in supplying specific information for individual requirements and invites your inquiry.

COLUMBIA, SOUTH CAROLINA

The 15 Counties...

served by this company in Coastal and southwestern

South Carolina

offer excellent advantages and opportunities for

- Home Seeker
- Investor
- Industrialist
- Agriculturalist

For further information address

Industrial Department

SOUTH CAROLINA POWER COMPANY

Charleston, South Carolina

Southeastern Governors' Conference Change

At the second annual meeting of the Southeastern Governors' Conference held at Atlanta last month, Laurence Wood (Chip) Robert, Executive Director of the Conference, announced that E. Leon Phillips, Governor of Oklahoma, and W. Lee O'Daniel, Governor of Texas, had both accepted invitations to join the Conference. The name was changed to Southern Governors' Conference.

One of the resolutions passed at this annual meeting made special acknowledgement of the work of the MANUFACTURERS RECORD and is reprinted below:

"WHEREAS: The Daily Press, both in news columns and editorials, as the Associated Press, the I. N. S., and the U. P., and magazines, particularly the MANUFACTURERS RECORD, have cooperated in every way possible in presenting the objectives of the Southeastern Governors' Conference, and at all times have been eminently fair in their statements and exceptionally generous as to space and

"WHEREAS: The representatives of these various organizations have been courteous, helpful and always cooperative, now

"THEREFORE, BE IT RESOLVED that a vote of thanks be extended to these various organizations, and their representatives, with the assurance of our appreciation for past, and an earnest desire for their future cooperation, and this Resolution being unanimously adopted by the Conference here assembled, it be spread upon the minutes of the Conference and copies be given to the Press."

The story of the inception of the Southern Governors' Conference figures in an article about the founder, "Chip" Robert, in a recent issue of the *Saturday Evening Post*. Apart from the popular treatment of the subject, definite recognition is given the South as an industrial region of growing importance, offering advantages in climate, raw materials, transportation and power to a wide variety of manufacturing enterprises.

CHARLESTON
South Carolina

The Port City With Many Advantages for Industrialists

The steady and constant increase in freight tonnage indicates that the port city of Charleston is fast becoming the principal city of import and export on the south atlantic coast.

It is to the advantage of every manufacturer and industrialist to investigate the opportunities of low cost transportation, economical accessibility to supplies and markets, mild climate and congenial labor conditions, unlimited power and water, combined with ideal sites for all types of manufacturing enterprises.

To know the opportunities offered to your particular type of business, write an outline of your needs and request an individual survey. There is, of course, no obligation, and all communications are held strictly confidential. Address:

Charleston Industrial Bureau

P. O. Box 312 Charleston, S. C.

A Proposed Infringement of Individual and States' Rights By The Federal Government

BY

William G. Rankin,

Commissioner, Department of Conservation, State of Louisiana

I AM surprised that serious consideration should be given to the two resolutions introduced in the House of Representatives by Congressmen Hobbs and O'Connor, H.J. Res. 176 and H.J. Res. 181, which were referred to the Committee on the Judiciary.

These resolutions relate to the establishment of title by the Federal government to certain submerged lands within the three-mile limit, lying along the coast of the United States, the object of the proceedings being to obtain possession of large petroleum deposits.

While these resolutions have the support of the U. S. Navy Department, which is especially interested in the petroleum reserves of the California coastal waters, the establishment of such a precedent makes the adjudication of the issue one of paramount interest to Louisiana as well as other states of the Union.

I must leave a discussion of the strictly legal technicalities and implications of the issue to the Committee on the Judiciary, which will doubtless have the benefit of expert opinion, but I would like to point out some of the more obvious objections, which may impress the lay mind, to such proceedings on the part of the national government.

Let me say at the outset that such procedings would constitute an infringement of our individual rights and liberties, which have been safeguarded to us by the Federal Constitution, and also certain inalienable States' rights which were recognized and guaranteed by the founding fathers.

This question of States' rights has been bitterly fought from the very beginnings of the Republic, as it was the apparent ambition of our forebears to build a strong centralized government without a sacrifice of the individual State identities and characteristics and without depriving the latter of certain rights and benefits.

From the first Confederation of the original States the proprietorship of the State within the three-mile limit was recognized by public opinion and sustained by court decision. Long before the value of our petroleum deposits was even suspected the fishermen of our coastal waters, from Maine to Georgia, were operating under a license from the State, for the benefit of the State and its people.

If for no other reason than that the lapse of years has weakened or destroyed any property equities that the Federal government may have enjoyed in the beginning, a precedent has been established that may not readily be ignored.

It is true that the founding fathers provided for such an abrogation of States' rights, but only in times of war stress or through an amendment of the Constitution by a majority vote of our people. Such amendments were recorded in the emancipation of the negro, woman's suffrage, prohibition and its repeal. But no such method of procedure is here suggested or contemplated.

As a matter of fact, the Federal government has always been so sensitive about the infringement of States' rights that it has hesitated to exercise its police and punitive powers where these powers encroached on those of the individual states. Notorious gangsters have been prosecuted for income tax evasion because their more violent crimes were localized within the boundaries of the State.

On the practical side let us consider the possible effects of any decision in favor of such confiscatory measures. If the Federal government were legally entitled to these petroleum deposits, it would be entitled to other natural resources that have heretofore been regarded as the property of the individual States, such as our salt water fisheries, oyster beds and other valuable sources of revenue.

Further, if the Federal government were legally entitled to these petroleum deposits, it would also be entitled to recover the value of previous production from these submerged lands within the three-mile limit, which would, of course, open up a vast field for controversy and litigation.

To deprive the people of our coastal states of these benefits would certainly appear to be an unfair act of discrimination in favor of the people of our interior States, but if the principle of "confiscation" through alleged property title were once established there would be no end to it and no section of our country or in-

(Continued on page 62)

CRUSHED GRANITE

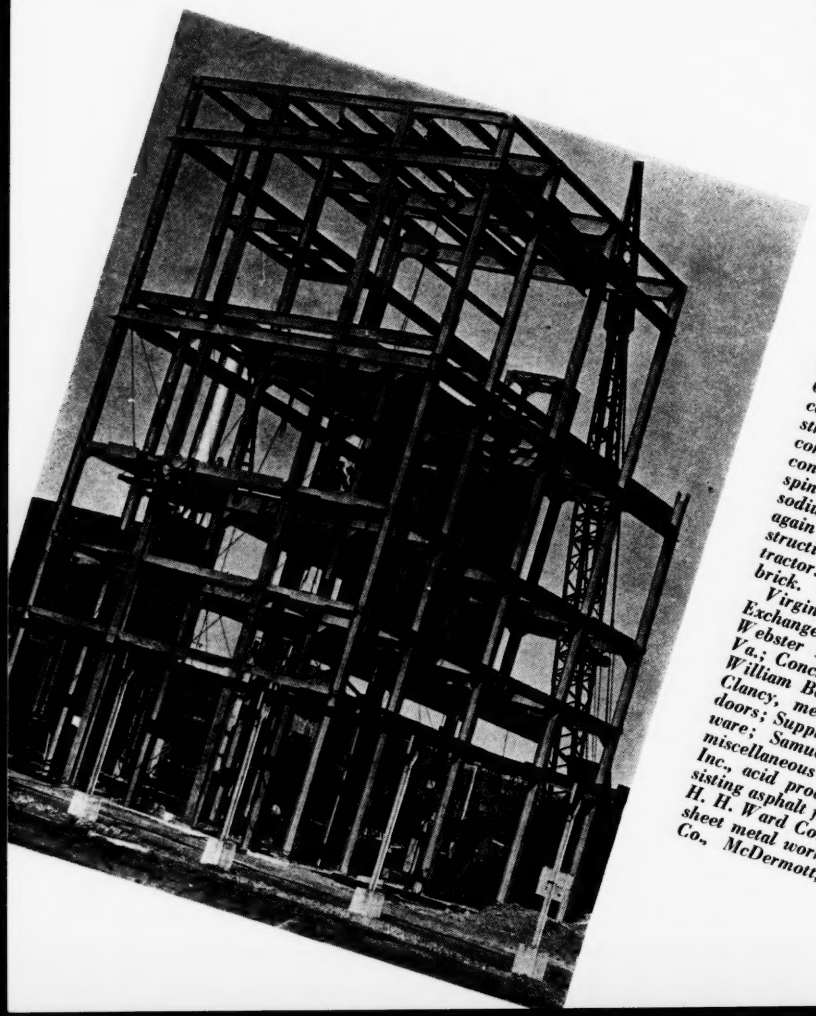
FOR CONCRETE AND BITUMINOUS PAVEMENTS

THE WESTON & BROOKER CO.

Quarries: Columbia, S. C.—Camak, Ga.
Offices: Columbia, S. C. and
Rhodes-Haverty Bldg., Atlanta, Ga.

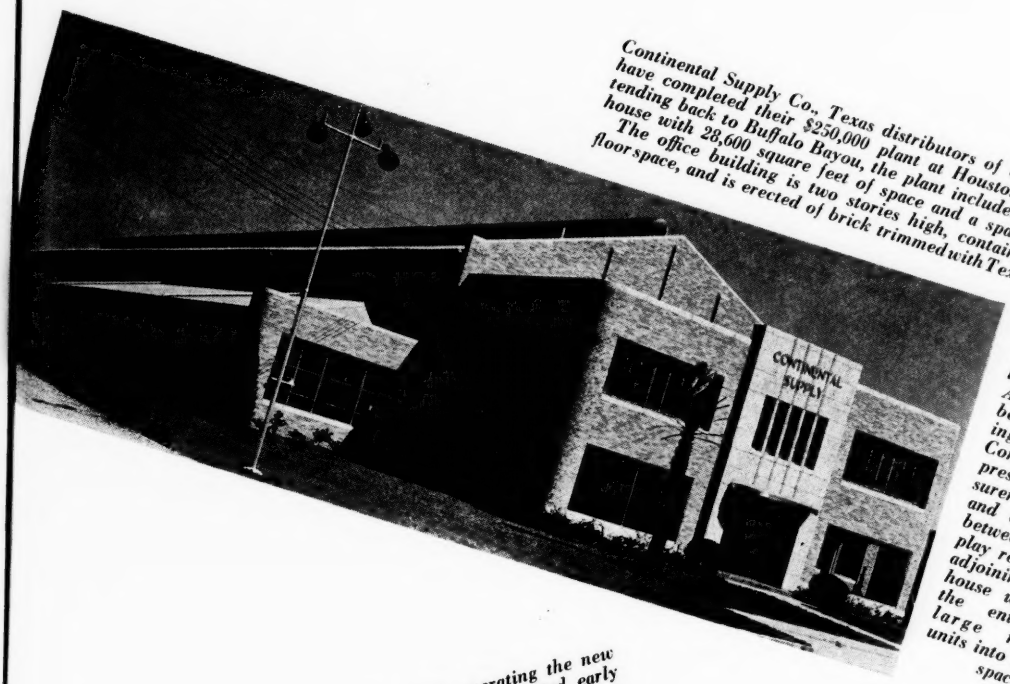
NEW INDUSTRIAL PLANTS IN THE SOUTH

Top—Plans have been turned over to contractors for erecting this $250,000 addition to the Haynes Hosiery Mills, Winston-Salem, N. C. This new building, designed by Albert Kahn, Inc., noted industrial architects and engineers of Detroit, will be 250 feet square, three stories high, have a monitor roof. Its walls will be brick, structural tile and cement; its floors, concrete. To contain 194,740 square feet of floor space, the new unit will be the latest word in textile mill construction.



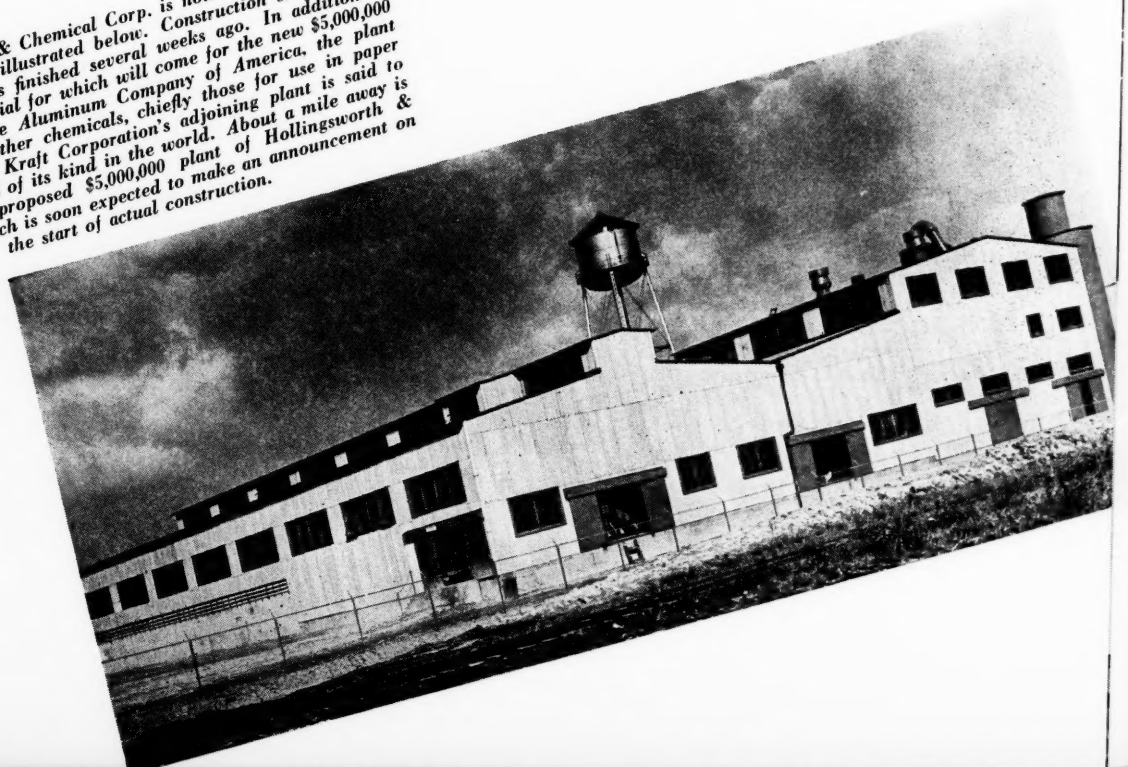
Left—Construction is advancing on the acid reclaiming plant at the American Viscose Corporation's, Roanoke, Va., plant. Upon completion, the plant which will reduce stream pollution and production costs, will contain evaporators and crystallizers to concentrate the waste acid from the Viscose spinning department and crystallize the sodium sulphate crystals, which then will again be used in spinning. Pettyjohn Construction Co., of Lynchburg, is the contractor. Walls of the structure will be brick. Among the subcontractors are: Virginia Bridge Co., structural steel; Exchange Lumber Co., millwork; all Roanoke. Webster Brick Co., brick; all Roanoke, Va.; Concrete Steel Co., reinforcing steel; William Bayley Co., steel sash; James A. Clancy, metal toilet partitions, tin clad doors; Supplee-Biddle Hardware Co., hardware; Samuel J. Creswell Iron Works, miscellaneous iron work; Ralph V. Rulon, Inc., acid proof brick floors and acid resisting asphalt floors; all Philadelphia, Pa.; H. H. Ward Co., Chester, Pa., roofing and sheet metal work; and Waller Bros. Stone Co., McDermott, Ohio, Ohio bluestone.

Glenn L. Martin Company's expanded plant at Middle River, near Baltimore, Md., with the $1,850,000 addition completed at the right makes this the largest single unit aircraft manufacturing plant in the United States. Construction on the new building, which adjoins the extension completed last year, was started early in February and finished within the time ordinarily allotted to erection of a residence.



Continental Supply Co., Texas distributors of oil and gas well supplies, have completed their $250,000 plant at Houston. Located on a site extending back to Buffalo Bayou, the plant includes modern offices, a warehouse with 28,600 square feet of space and a spacious pipe yard. The office building is two stories high, contains 3,600 square feet of floor space, and is erected of brick trimmed with Texas limestone. Its foyer is stainless steel, its floors, Azrock tile in the display room, and rubber tile in the upstairs. A third floor can be added, according to F. M. Mayer, Continental vice president and treasurer. Four doors and a drop panel between the display room and the adjoining warehouse will permit the entrance of large machinery units into the show space.

American Cyanamid & Chemical Corp. is now operating the new $250,000 alum plant illustrated below. Construction started early last autumn and was finished several weeks ago. In addition to alum, the raw material for which will come for the new $5,000,000 Mobile plant of the Aluminum Company of America, the plant will manufacture other chemicals, chiefly those for use in paper making. Southern Kraft Corporation's adjoining plant is said to be the largest mill of its kind in the world. About a mile away is the site of the proposed $5,000,000 plant of Hollingsworth & Whitney Co., which is soon expected to make an announcement on the start of actual construction.



The First Annual Southern Paper Festival

THE first Annual Southern Paper Festival has come and gone. The three days of festive gaiety, interspersed with meetings of a more serious nature, passed all to quickly in the pleasing, traditional setting of historic Savannah, Ga., from April 17 to 19 inclusive.

The purpose of the Festival was to commemorate paper; to stimulate and further the uses to which products of the pulp and paper industry might be put; to educate the public in the importance of the industry, particularly to the South; and to advance the purposes of forest conservation and management.

Sponsored by the governors of twelve Southern states and by manufacturers, it was fitting that the Festival should be held at Savannah, for it was there that the late Dr. Charles H. Herty established his laboratory, and it was there that Dr. Herty brought to fruition much of his research which contributed so materially to the recent expansion of the Southern pulp and paper industry.

In the hotels and city auditorium, exhibits by engineering firms, pulp and paper companies, educational institutions, state and federal forest services, and other interested groups, were objects of considerable interest and served as an appropriate introduction to the pageant held each night, wherein the story of paper and the part Southern pines are playing in its manufacture, was dramatized.

Among the many distinguished guests were Governor Rivers of Georgia and Governor Maybank of South Carolina, both of whom expressed the hope that financial help will be forthcoming from the various Southern states and private sources to permit the Herty Laboratory to carry through the 5-year research program which the founder laid down prior to his death. The value of this work cannot now be estimated, but some of the results already are seen in the experimental pulping of Southern hardwoods, the conclusions of which were printed in the MANUFACTURERS RECORD for April. This is a particularly important step in view of the statement made by Captain I. F. Eldredge, regional director of the U. S. Forest Survey, at the Southern States Pulp and Paper Club meeting that the excess of growth over consumption of Southern hardwoods presents a challenge to the wood using industries to overcome and so better balance the increment and drain of all Southern timber. The proportion of pines and hardwoods in the South is almost equal.

Another speaker at the Paper Club meeting which was opened by R. G. McDonald, Secretary of the Technical Association of the Pulp and Paper Industry, and then placed in charge of Dr. Charles Carpenter, Technical Director of the Herty Laboratory, was Frank Heyward, General Manager of the Southern Pulpwood Conservation Association. Mr. Heyward spoke on the subject—"Some Phases of Pine Forest Management for Pulpwood"—and in addition to graphically illustrating the various types of desirable and undesirable trees in forest management, pointed out that pulpwood actually represents the cheapest form and one of the smallest commodities taken from our forests, a point emphasized by James H. Allen, of the Union Bag and Paper Corporation, who says that at the present time the drain on Southern forests by the pulp and paper industry is limited to only seven per cent of the total drain.

The third speaker among those discussing the timber situation was Karl Swenning, whose paper dealt with the practical problems of procuring the requisite quantities of specification pulpwood over a long period of years and at such a cost that the mill will be able to produce at a profit.

The fourth speaker on this program was Eskell Nordell of the Permutit Company, whose paper was entitled—"Conditioning Water for the Paper Mill."

In all these talks, together with those presented at other meetings, there was constant reiteration of the necessity for better fire control and fire prevention.

One of the highlights of the occasion, as far as the pulp and paper industry is concerned, was the first annual meeting of the Southern Pulpwood Conservation Association, the president of which is James H. Allen, executive vice president of the Union Bag and Paper Corporation. In his address, Mr. Allen stated that "our purpose is to formulate a practical program of utilization and conservation of the forest resources of the South in order to assure the prevention of a timber shortage with its consequent dire effect upon the pulp and other forest industries involving the welfare of the South and of the nation by (a) a voluntary application of sound principles of forest practice as recognized and accepted by the membership; (b) a program of education directed to forest owners and operators and to the public; (c) promoting the welfare of those who grow, market and use pulpwood and other forest crops; and (d) cooperating with federal, state and other public agencies in a program of protection and perpetuation of the forest resources of the South."

Referring to the price paid for pulpwood by mills last year, Mr. Allen pointed out that although the price of most forest products declined in 1938 from the previous year, this did not occur with pulpwood and further, that Union Bag paid 35 cents a cord more than the supply could have been purchased for, justifying the additional price on the ground of good sound forestry practice. Mr. Allen also spoke of the part the banks play in the development of the industry, singling out the Citizens & Southern National among the Georgia banks which have contributed so materially.

After making several recommendations looking to the prevention of forest fires, Mr. Allen spoke of the existing mills pulpwood consumption, saying—"I estimate the present potential capacity of the pulp mills operating in the South to be 2,500,000 tons per year, which capacity when operating at 100 per cent would require 4,000,000 cords of wood per year. If the pulp and paper mills selected the areas to grow this volume of timber, the timber could be raised on 8,000,000 acres of land. Assuming that within the next ten year period this capacity be doubled, it would be a safe figure to use an acreage of 16,000,000. It is my best judgment that a group of mills should begin at Virginia and select land clear through to Houston, Texas, in a quantity equivalent to 16,000,000 acres, and that this Association be given maps of the area, for by doing this we would make more definite our objective."

At the close of the meeting Mr. Allen announced that Union Bag would set aside 40 acres of land, dedicating the area to the Association. On this tract seedlings are to be planted and their progress and management will be keenly observed by members each year when they attend the Festival.

Among the other speakers at this meeting were Alexander Calder, president, Union Bag and Paper Corporation; Captain I. F. Eldredge; J. S. Kircher; Major F. Spessard, president, American Pulpwood Association; and W. E. Dunham, president, Savannah River Lumber

(*Continued on page* 64)

LIFE IN NORTH CAROLINA MILL VILLAGES

Scenes such as these may not be new to Southerners, but to others they may be interesting as being far more typical of life in Southern mill towns than the "distress" conditions all too frequently over-emphasized. —Editor, M. R.

Left, top to bottom—This dairy, with a prize-winning cattle (Holstein-Fresian herd) is operated by the mill for its employes on a non-profit basis. Milk is sold to employees for 10c a quart, 6c a pint, 3c a half pint. It is one of the proudest projects of the owner of a large combed yarn factory in Gaston county.

At a mill community house in Gaston county, two textile employees use their evenings to build a model of the plant in which they work.

Touchdown! Children of mill workers at Belmont are pretty good at football and cheerleaders come from both mill-owning and mill-working families.

"I'll manicure your nails if you'll shampoo my hair," says one school child to another in the village community house in a Gaston county mill village.

Children of mill workers at Cramerton take an interested part in a vocational training class at the local school.

Right, top to bottom—Mill workers at play on the golf course reserved for employees of Cramerton Mills, at Cramerton. The yarn-spinning factory is visible in the background.

Undismayed by the camera is this typical girl engaged in cone-winding in a combed-yarn factory at Gastonia.

Many combed-yarn manufacturers and other mill operators are concerning themselves with the leisure time of their employees. One North Carolina industrialist provides a hot house so that employees with choice plants can store them there during cold snaps. Here a flower hobbyist arrives with his prize flower.

THE TIMBER RESOURCES of the SOUTH

Part I

The land area of that part of the South which is regarded as a timber region totals 385,782,000 acres, and of this, forest land accounts for 210,600,000 acres. However, not all this area is productive and commercial. Forest land is confined to 202,531,000 acres, with a saw timber area of 96,690,000 acres—25,125,000 acres old growth, and 71,565,000 acres second growth—plus a cordwood area of 47,960,000 acres.

The stand of saw timber amounting to 386,570,000,000 board feet comprises 214,630,000,000 board feet of softwoods and 171,940,000,000 board feet of hardwoods. Of the softwoods, 54,800,000,000 board feet are old growth and 159,830,000,000 board feet are second growth, while the hardwoods include 78,625,000,000 board feet old growth and 93,315,000,000 second growth.

Southern pines account for over 196,000,000,000 board feet of the saw timber stand. Other softwoods include 11,405,000,000 board feet of cypress, 2,180,000,000 board feet of hemlock and almost 5,000,000,000 board feet of miscellaneous softwoods. Among hardwoods, oaks rank first with more than 65,000,000,000 board feet; red gums total 27,405,000,000 board feet; tupelo and black gums, 20,360,000,000 board feet; yellow poplar, 9,190,000,000 board feet, and miscellaneous hardwoods number close to 50,000,000,000 board feet.

On the basis of cordwood area alone (47,960,000 acres), the estimated quantity is 187,560,000 cords—63,105,000 cords of softwood and 125,455,000 cords of hardwood. But in the saw timber area the stand in terms of cordwood is 646,740,000 cords, including 207,805,000 cords of softwood and 438,935,000 cords of softwood. Together these total 834,300,000 cords, and if 15,740,000 cords on restocking areas and 278,660,000 cords of cull trees are added, the full total of timber in the South reaches 1,128,700,000 cords.

In all sections of the South except one, Southern pine is the principal species now used in the manufacture of pulp and paper. The exception is the Delta-Hardwood sections of Louisiana, Alabama and Arkansas. Other woods used are: spruce, fir, hemlock, white pine, pellow poplar, birch, beech, maple and gum in the mountain regions of Tennessee, Kentucky, West Virginia and parts of Virginia and North Carolina. In the Piedmont area of Alabama, Mississippi, Georgia, North and South Carolina, gums, yellow poplar and pine are also used. The latter woods also are used in the Coastal area extending from Louisiana to Virginia inclusive. In the Delta Hardwood region, gums are the chief source of supply with some cottonwood and yellow pine, while in the Pine-Hardwood-West region of Louisiana, Arkansas and parts of Alabama, Oklahoma and Texas, Southern pines and gums are used.

EDITORIAL NOTE:—Although the quantity of pulpwood currently taken annually from Southern forests comprises less than ten per cent of all timber consumed, the development of the pulp and paper industry in the South has focussed attention on Southern forest resources. For that reason, and to supply the much needed following information, as well as answer the numerous inquiries coming to our attention, the MANUFACTURERS RECORD takes pleasure in presenting this new and important data which has not been published anywhere else. This article will be published in two parts—the first follows and the second will appear in our June issue.

Alabama

Out of a total land area of 32,819,000 acres, forest land in Alabama consists of 18,878,000 acres and of this approximately 18,837,000 acres are classified as commercial forest land.

The saw timber on this commercial forest land is 38,490,000,000 board feet, extending over an area of 10,174,000 acres with 2,498,000 acres of old growth made up of 6,220,000,000 board feet of softwoods and 5,882,000,000 board feet of hardwoods while second growth trees occupy 7,676,000 acres and support 19,365,000,000 board feet of softwoods and 7,020,000,000 board feet of hardwoods. The total softwoods amount to 25,585,000,000 board feet and hardwoods aggregate 12,902,000,000 board feet.

The cordwood area of 3,825,000 acres contains a total volume of 16,675,000 cords—6,990,000 cords of softwood and 9,685,000 cords of hardwoods, while the cordwood volume in the saw timber area amounts to 59,120,000 cords or 21,280,000 cords of softwood and 37,840,000 cords of hardwoods. Combined, the total supply of cordwood is 75,795,000 cords.

Among softwoods, Southern yellow pines are the predominating species and exceed 25,000,000,000 board feet. Hardwoods consist of approximately 4,300,000,000 board feet of oaks; 2,575,000,000 board feet of red gum; 1,425,000,000 board feet of black gum and tupelo; 1,225,000,000 board feet of yellow poplar and 3,350,000,000 board feet of miscellaneous hardwoods.

Arkansas

Nearly two-thirds of Arkansas' 33,616,000 acre land area is forest land. Of this area, comprising 20,915,000 acres, approximately 20,670,000 acres is commercial forest land with a saw timber stand of 36,797,000,000 board feet on 10,490,000 acres. Making up this stand are 18,500,000,000 board feet of softwoods—4,485,000,000 board feet in old growth and 14,015,000,000 board feet in second growth, and 18,295,000,000 board feet of hardwoods — 7,775,000,000 board feet in old growth and 10,520,000,000 board feet in second growth. The total old growth covers 2,695,000 acres and second growth extends over 7,795,000 acres.

In addition to the saw timber area there is a cordwood area of 4,715,000 acres containing 4,290,000 cords of softwood and 17,080,000 cords of hardwood, or a total of 21,370,000 cords. If to this is added the saw timber area in terms of 19,210,000 cords of softwood and 50,470,000 cords of hardwood (a total of 69,680,000 cords), the entire cordwood supply for the state is 91,050,000 cords.

The principal species and their approximate stands are: Southern pine, 18,000,000,000 board feet; oaks, 8,575,000,000 board feet, and red gum, 3,000,000,000 board feet. Tupelo, black gum, cottonwood, cypress and miscellaneous hardwoods together comprise about 7,000,000,000 board feet.

Florida

Florida, with a total land area of 35,111,000 acres, has 22,365,000 acres in forest land, of which 21,850,000 acres are designated as commercial forest with a saw timber area of 3,320,000 acres old growth and 3,800,000 acres second growth, or a total of 7,120,000 acres.

The stand of saw timber on the commercial forest area, amounting to 23,440,000,000 board feet, is made up of

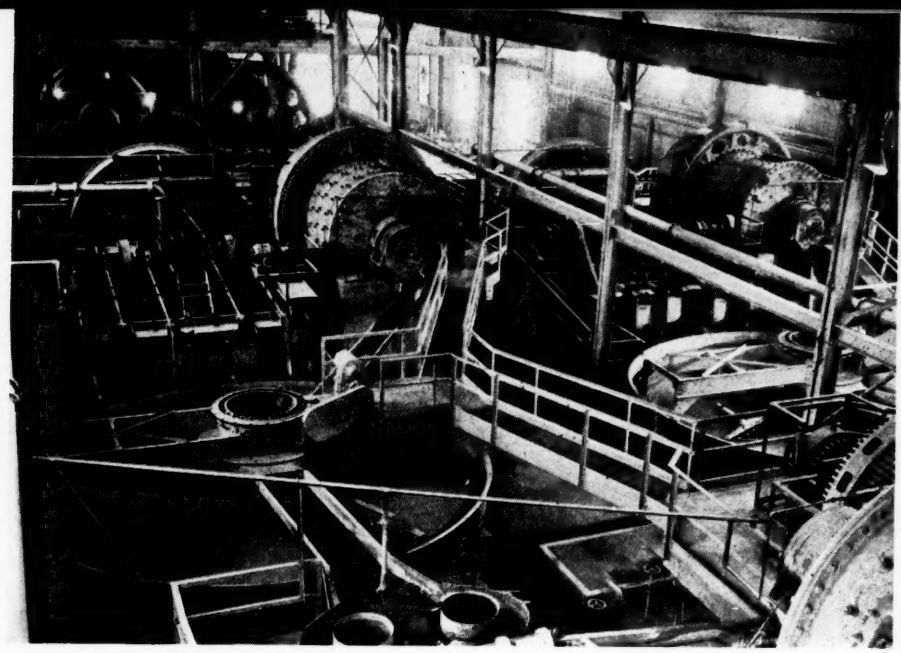
(Continued on page 48)

Alabama Cement Plant Rebuilt

BY

S. J. Robison

Chief Engineer,
Universal Atlas Cement Co.



Interior of clinker grinding building

ONE of the first portland cement plants in the South was started on a small scale at Leeds, Alabama, in 1905. A single small cement kiln with a capacity of less than 500 barrels per day was installed, together with raw-material and finish-grinding machinery of suitable capacity. The original plant was enlarged from time to time and in 1930 included seven kilns of various sizes and capacities. At that time it was purchased by the Universal Atlas Cement Co.

Cement mill machinery has been improved to such a degree since the original installation was made at Leeds that the old plant equipment was practically obsolete. Hence a program of improvement to completely modernize the plant was started in the summer of 1937 and completed in June, 1938. This modernization included complete replacement of all production equipment.

The principal constituents of Portland cement are lime, alumina and silica, and Leeds is exceptionally well supplied with suitable raw materials. Quarries of high-grade limestone, high-alumina shale and sandstone are all located on the company's property and the Cahaba coal basin is only a few miles to the west, assuring a supply of high-grade fuel for the plant for many years to come.

The exceptional supply of materials and the confidence of the company in the future of the plant territory led to the decision to rebuild with the best available modern equipment for the efficient production of all types of Portland cement.

Limestone, of which about 500 pounds is required for the manufacture of a barrel of cement, is obtained from an open-pit quarry adjacent to the mill. Stone is drilled with a new electric-driven churn drill which sinks holes nine inches in diameter to the full depth of the quarry face. The holes are spaced about 15 feet apart and are charged with blasting gelatin. A number of holes are fired at one time to bring down about a hundred thousand tons of stone to the quarry floor at a single blast.

The broken stone is loaded by an electric shovel mounted on caterpillar treads and equipped with a 2½-cubic yard dipper. This shovel can handle stone up to three-foot cubes and loads 200 net tons per hour into the quarry cars. The cars, four in number, carry about 17 tons of stone each. They run on a standard-gauge double track leading from the quarry floor to the crusher house on ground level near the edge of the quarry. Each car is driven by two DC motors mounted on the axles and power is supplied to them by a third rail. An operator located in a tower at the crusher has the entire track system in view and handles the movement of the cars by a bank of switches each of which controls a section of the third rail.

When a car reaches the feed floor of the crusher building 165 feet above the quarry floor, the throw of a switch by the tower operator energizes an electric dumping apparatus which tilts the car, and discharges the load into a 42-inch gyratory crusher which reduces the stone to six-inch cubes.

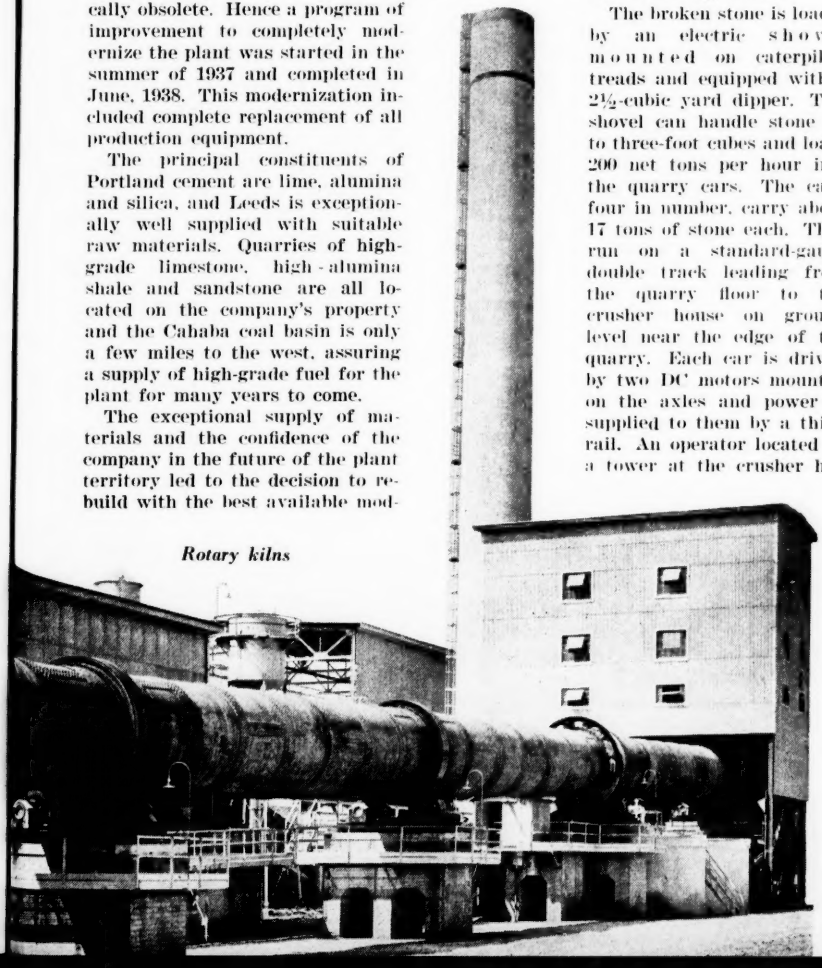
The stone is conveyed from the crusher to a hammer mill which further reduces it to one-half inch size and smaller. Material from the hammer mill is delivered by a belt conveyor to raw-material storage—a crane runway of reinforced concrete construction 100 feet wide by 384 feet long. Shale and sandstone which are quarried and crushed about a mile from the plant are delivered to the storage by motor trucks and handled along with the limestone by a 10-ton overhead-traveling crane equipped with a 3-cubic-yard clamshell bucket.

At one side of the storage there are four large concrete hoppers — one for each material. Crushed materials are drawn simultaneously from openings at the bottoms of the hoppers in proportions determined by the plant chemist by a set of continuous scales and the mixture is conveyed by an inclined belt conveyor to the grinding building. This building is a steel structure covered with precast concrete tile and sided with corrugated cement asbestos. The raw-grinding machinery occupies one end of the building and the clinker-grinding machinery the other end.

The mixture of raw materials is ground in ball mills of 9½ feet diameter and 8 foot length. Water is added at several points in the grinding circuit and the wet mix is passed through preliminary mills partially filled with steel balls 4 inches in diameter and smaller, and rotated about 17 revolutions per minute by a 350 HP synchronous motor. The mill discharges to two rake classifiers

(Continued on page 60)

Rotary kilns



By-Products Of Southern Pine

BY

Robert C. Palmer

Chief Chemist, Newport Industries, Inc.

THE collection of naval stores—that is turpentine and rosin—from the living pine tree has been an important industry from the Carolinas to Texas, though with many ups and downs, for a hundred years. The American industry has long dominated the world's supply of these products.

However, the destruction of the virgin forests which went on at an alarming rate particularly in the period 1880 to 1910, led many to believe the naval stores industry was doomed to extinction. Others, perhaps more ingenious, looked for new possible sources of supply.

Millions of tons of naval stores were locked up in the pine forest waste from the lumbering operations, especially in the stumps. The older the waste, the richer in rosin and oils, but how to get them out was the problem.

An Industry from Waste

In the earliest attempts to utilize the stump (about 1900) the oil—the turpentine—received first attention as it was rather easily gotten out with steam.

But there was no money in making just turpentine and obtaining a product which proved to be difficult to sell because of its peculiarities. An infant industry was about to perish—that was about 1906 to 1908. Then along came a man with a single, but revolutionary idea. A ton of fat wood had about five times as much rosin in it as oil. The thing to do was to get this rosin out and the easiest way was to dissolve it and use the cheapest and easiest recoverable solvent. Such a process would not only make the recovery of turpentine profitable, but would be the basis of a whole naval stores industry (turpentine *and* rosin) from pine forest waste.

Briefly the proposed process was to grind up the fat wood in hogs and shredders; steam out the oils; extract the rosin with a recoverable petroleum solvent and save as much as possible of the solvent for continual re-use. Most of the plants now operating are still using this general basic process.

After much study, progress was made in standardizing the principal products, steam distilled wood turpentine and wood rosin, an there was notable improvement in the most objectionable properties.

The little industry, therefore, survived and by 1916 there were four or five fairly good sized plants either operating or attempting to operate the process. These plants had then a combined capacity of extracting about 500 tons of wood a day.

Pine Oil

There was another factor in this new source of naval stores products that was destined to play an important part in its permanence. Here the chemist stepped into the picture and showed that the laboratory of old Mother Nature had been at work and had synthesized a lot of new products from the turpentine. The turpentine that is present in the oleoresin, which flows from the live pine, does not contain these products at all. The new product acquired the name of Steam Distilled Pine Oil.

In the early days of the steam and solvent industry this material was fortunate in finding a valuable application in the flotation processes for recovery of copper, silver, etc., from low grade ores. Also the U. S. Public Health Service learned of the oil and published a formula by which it could be used as a cheap disinfectant.

New methods of refining the oil were developed which led to introducing special pine oils in the great textile industry.

Pine oil has always stimulated a great deal of speculative interest as a potential raw material for chemical processing. It has been the principal source of the perfume base, terpineol, for some years as the main constituent of the pine oil is this same terpene alcohol, terpineol.

At the present time a large amount of pine oil is chemically processed both here and abroad. Turpentine has been the starting point for synthetic camphor for a long time, but only recently has U. S. P. camphor been produced on a commercial scale from pine oil. Other valuable materials besides terpineol and camphor, manufactured in the chemical processing of pine oil, are anethol and fenchone.

Turpentine

Not many years ago most of the turpentine was consumed by the paint and varnish industry in the actual manufacture of these materials. Paint and varnish are still the largest users of turpentine, but now it is largely used as a thinner by the final consumer rather than by the paint manufacturer.

There are other uses for turpentine based upon its solvent value, such as in metal, furniture and shoe polishes, and in recent years a quite large chemical use has developed. Nearly every important industrial nation of the world is now producing synthetic camphor from pinene which is the principal constitutent of turpentine. The wood waste naval stores industry was the first to produce pinene for synthetic camphor manufacturers.

Rosin

Until about ten years ago all the wood rosin produced was pretty much the same color grade, and it was a comparatively dark color. It was long the dream of the chemists in the industry to improve this color, as this property naturally greatly limited the diversification of uses.

It was a hard nut to crack and the problem required a large amount of research. No single development had a more revoluntionary effect than the manufacture of pale grades of wood rosin.

When the statement is made that close to a million pounds of wood rosin is produced in the country every *day*, and this is about one-third of the total rosin produced in the United States alone, the most frequent question is what are the uses for this surprising large quantity. Most of our cake laundry soaps contain the soap of rosin—other countries use more rosin in soap than here. Nearly all book, magazine, writing and wrapping paper, paper bags, boxes, etc., contain some rosin as size or waterproofing material. Printing ink often contains rosin. The varnish and enamel manufacturer uses rosin in many ways. Other important uses of rosin where special wood rosins are preferred are in the manufacture of linoleum and floor tile, and in making the sand binder in metal casting called core oils or core binders. Many industrial tapes, such as electrical friction tapes, auto marking tapes and some of the finer medicinal tapes contain rosin. It is even used in road making as an ingredient of asphalt emulsions. Then there are disinfectants where the rosin is used as a soap to produce an emulsion, and it is used in automobile tires, battery waxes, matches and animal depilatories.

Wall Board

The story is not entirely told without mention of what has been done to make the utilization of the pine forest waste complete. From the outset the extracted wood was conveniently used to furnish the necessary fuel requirements of the operation. Much study was given, however, to a possible utilization of this fiber, and it was found to be especially well suited as a raw material for fibrous insulating and building materials. This complete utilization has been successfully accomplished. The product is made in many styles and colors, from ¼" to 1¾" in thickness, and is used for industrial equipment and house insulation, plaster lath, acoustical and interior decoration.

Whereas in 1916 about 500 tons of pine wood waste was being processed daily, there are at present ten plants with an

(*Continued on page* 62)

The Seaboard Air Line's diesel engined Silver Meteor is just one of the new modern trains operating over South Carolina railroad tracks.

Railroads Spend Millions In South Carolina Annually

THE railroads of South Carolina in 1937 expended approximately $15,000,000 for materials, equipment, supplies, wages and taxes.

As agencies of transportation, as employers of labor, as buyers of materials and supplies, including forest products and textiles, and as supporters, through taxes, of state, county and local government, the twenty-odd railway companies in South Carolina have been for many years and are today among the foremost constructive forces of the Palmetto State.

South Carolina has had a historic part in the railway development of this nation. The state's first railroad was chartered in 1827, three years before the first steam railroad was opened in this country. Its first locomotive, appropriately and prophetically named the "Best Friend," made its initial run out of Charleston in 1830, when there were only twenty-three miles of railroad on the North American continent — thirteen miles in Maryland and ten miles over which the "Best Friend" was operated in South Carolina.

From that time forward railway development paralleled agricultural and industrial development in South Carolina. By 1850 there were close to 300 miles of railroad in the state. By the outbreak of the war between the States, South Carolina had around 1,000 miles of railroad. By 1890 the state's mileage had passed 2,000; and by the turn of the century there were nearly 3,000 miles of railroad in operation in South Carolina. Today, there are some 3,600 miles of railroad in the state—enough to reach from Charleston to Seattle—and every one of South Carolina's forty-six counties is served by one or more railway lines. In many of these counties the railroads are among the leading property owners and employers.

Daily, over South Carolina's network of railroads speed many famous passenger trains—fleet air-conditioned "hotels on wheels," linking New York, Philadelphia, Baltimore and Washington with Atlanta, Birmingham, New Orleans, Miami, St. Petersburg and Sarasota, providing many comforts to those who demand the best in travel luxury. And over these rails also speed many local passenger trains, freight and express trains, trains laden with fruits and vegetables under refrigeration, commodities of every description, and carloads and carloads of express and United States mails—making up "the lifeblood of the nation."

There are six Class I railroads in South Carolina; that is to say, railroads each having operating revenues, in all states, of more than $1,000,000 a year. There are some sixteen smaller line-haul and terminal railroads in South Carolina for which statistics are not available. On July 1, 1937, the six Class I railroads employed 8,257 workers in South Carolina, running trains, repairing tracks and bridges, manning stations and repair shops and performing various other duties incident to railway operations.

Railroads throughout the country are buyers of South Carolina's products. The far-flung railway enterprise depends upon the forests and mills of South Carolina for certain types and grades of lumber, and South Carolina's textile mills supply the railroads with cotton waste and canvas, duck and other fabrics. Railroads which operate in the state also spend many thousands of dollars each month for electric light and power, telephone and telegraph service, water, rentals, doctors, druggists, hospitals, attorneys' fees, insurance, contract work, laundry, stationery and printing, traveling expenses, postage, advertising, and so on.

While it has been impossible to assemble complete data on railway purchases and expenditures in South Carolina, yet some idea of the extent of railway purchases in the state may be gained from the fact that three railway companies, representing 55 per cent of the state's mileage, reported purchases of materials, supplies and fuel in South Carolina of

(Continued on page 58)

April Construction Rises above March

Southern Contract, Trends by Months

BETTERING the monthly average for the first quarter of the year by a comfortable margin, construction in the South during April showed encouraging signs of a pick-up in privately financed work as both building and industrial contracts in this field advanced substantially over those reported awarded in the preceding month. Most public contracts were lower.

April's total, as tabulated from the projects listed in the daily issues of *Construction*, was $72,697,000. A large part of this figure, or thirty-four per cent, was represented by public building. Private building, with its nineteen per cent, vied with industrial work for second place. Engineering construction was sixteen per cent of the month's total; highways and bridges, twelve per cent.

Commercial, residential and assembly building contracts all contributed to the twenty-seven per cent rise of private building to $13,422,000 in April, as compared with the preceding month. Industrial contracts moved horizontally upward over one hundred per cent. The award for buildings for the $10,000,000 celanese plant at North Pearisburg, Va., was largely responsible for this increase.

Public building during April was below the level reached in March but above that for the other two months of this year. Awards for governmental structures ran slightly over one-half of the rate of the month before. Housing projects, which for the past several months had been in the course of preparation, swung into the contract stage during April to bring the month's total for this type of work to three times that of March. School construction was also above the March figure.

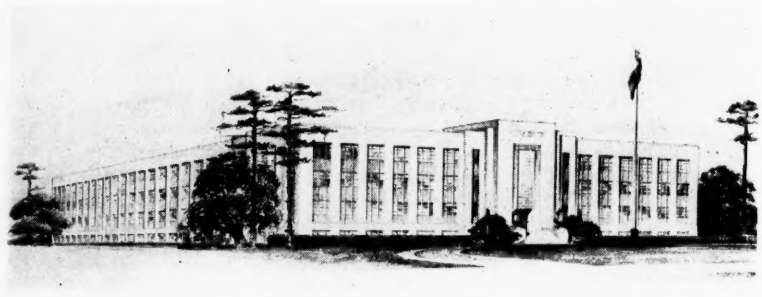
Engineering operations, such as dredging and earthwork, governmental electric projects and sewer and water works construction, in April reached the lowest point so far this year. Contracts for dams, drainage, dredging, earthwork and airports were the most inactive. These were down sixty-eight per cent. Sewer and water work decreased about twenty-three per cent.

Power construction alone, of all publicly financed work, showed an increase, surpassing the March figure by over twenty per cent and preceding months of the year by greater percentages. This bore out the recently made announcement of the Rural Electrification Administration that its program was at the highest level yet attained, including allotment of funds, extension of previously approved projects, formation of new ones, construction of lines, meter connections and payments to contractors and others for construction. The independent offices bill for the coming fiscal year authorized $40,000,000 REA loan funds.

No definite information is available on the amount of funds to be appropriated for maintenance and improvement of rivers and harbors and flood control projects. The report of the Chief of Engineers on the amounts that could profitably be expended during the coming fiscal year listed approximately $103,000,000 for new work, $51,700,000 for maintenance of rivers and harbors and about $248,300,000 for both general and Mississippi River flood control.

Approved budget estimates, the War Department has announced, list $39,-

The illustration below shows as it will appear when completed $1,000,000 *regional research laboratory to be built at New Orleans by the Federal government. Bids are to be opened May* 23. *Offices, library, conference rooms will be housed in the* 211-*foot base of the U-shaped structure. From this section, which is the front of the design shown, will extend two* 306-*foot wings —one to contain research laboratories equipped for work in chemistry, physics and biology; in the other will be a number of smaller laboratories, space for heavy engineering equipment. Both the administrative and laboratory sections will be air-conditioned. Construction will be fireproof throughout, with an exterior finish of light colored brick. Steam will be generated in a small separate power plant, designed to assure smokeless combustion of gas or oil.*



Statistics of South's Construction

	Contracts Awarded	Contracts to be Awarded	Contracts Awarded First Four Months 1939
	April, 1939		
PRIVATE CONSTRUCTION			
BUILDING			
Assembly (churches, theatres, auditoriums, fraternal)	$1,006,000	$2,463,000	$4,164,000
Commercial (stores, restaurants, filling stations, garages, etc.)	2,452,000	1,203,000	8,964,000
Residential (apartments, hotels, dwellings)	9,445,000	13,171,000	32,790,000
Office	519,000	415,000	10,901,000
	$13,422,000	$17,252,000	$56,819,000
INDUSTRIAL	$14,344,000	$8,870,000	$30,200,000
PUBLIC CONSTRUCTION			
BUILDING			
City, County, State, Federal	$8,534,000	$18,098,000	$39,925,000
Housing	7,457,000	22,350,000	11,539,000
Schools	8,389,000	7,721,000	35,762,000
	$24,380,000	$48,169,000	$87,226,000
ENGINEERING			
Dams, Drainage, Earthwork, Airports	$2,949,000	$5,213,000	$23,805,000
Federal, County, Municipal Electric	6,008,000	7,564,000	22,997,000
Sewers and Waterworks	3,071,000	7,995,000	11,909,000
	$12,028,000	$20,772,000	$58,711,000
ROADS, STREETS AND BRIDGES	$8,523,000	$40,759,000	$47,609,000
Total	$72,697,000	$135,822,000	$280,565,000

000,000 for new work on rivers and harbors, including $9,000,000 for power installations, and $41,000,000 for maintenance of existing projects. Estimated amounts in the budget for flood control are $110,000,000 for general flood control work and $37,800,000 for work on the Mississippi River and its tributaries.

The contract awarded to Hughes-Foulkrod Co., Philadelphia, Pa., for construction of the six buildings at the new plant being established in Virginia by the Celanese Corporation of America stood out in the list of industrial plants. Another firm in the textile field at practically the same time made preparations to go ahead with a large addition to a hosiery manufacturing plant. The project was that of the Hanes Hosiery Co. at Winston-Salem, N. C. Albert Kahn, Inc., Detroit, designed the Hanes addition and is also the designer of the $1,850,000 building being rushed to completion at Middle River, near Baltimore, by the Glenn L. Martin Co. under a $3,000,000 airplane plant expansion program.

Several steel manufacturers took steps to add to their facilities. The American Rolling Mill Co., of Middletown, Ohio, acquired a riverfront site at Huntington, W. Va., where $360,000 will be spent for tipple construction and barge equipment. Wheeling Steel Corp., Follansbee, W. Va., placed the order with the Koppers Co., of Pittsburgh, Pa., for designing and constructing a benzol refining unit at its by-product coke plant. The steel company also will modernize its ammonium sulphate drying and tar removal equipment.

Tennessee Coal, Iron and Railroad Co., Fairfield, Ala., subsidiary of United States Steel, is installing the equipment necessary for producing large quantities of cold formed steel sections to be used in prefabricated building units. Bethlehem-International Supply Co., Bethlehem Steel affiliate, made the award for its new warehouse to adjoin an existing structure at Houston, Tex. The Southwestern Construction Co. received the contract. The building will be 320 by 264 feet, of brick, fabricated steel and corrugated iron construction. Four overhead electric cranes are to be installed.

John Felmley Co., of Bloomington, Ill., contractor for the big United States Tobacco Co. plant at Richmond, Va., received bids for mechanical, electrical, plumbing, heating, sprinkling and ventilating work for the project. Schmidt, Garden and Erickson, Chicago, are the architects. Bids are soon to be opened by Julien P. Friez & Sons for a $500,000 laboratory to be erected on a newly acquired site north of Baltimore, fifteen contractors taking out plans for the plant.

The Continental Oil Co. let contract to the Fluor Corp., Ltd., Kansas City, Mo., for facilities in the Ville Platte oil field, Louisiana. These will cost $500,000. An announcement was made toward the middle of April that a $5,000,000 newsprint pulp mill was in prospect for Iuka, Miss. The Reconstruction Finance Corp. was reported to be putting up one-half the capital, with private interests furnishing the balance. This would make the second such plant in the South. A factory of similar size is now under construction at Lufkin, Tex.

Another important industrial construction operation is being executed near Sheffield, Ala., where the Fiske-Carter Construction, of Greenville, S. C., is erecting the buildings for the $5,000,000 Electro-Metallurgical Co. plant. Work is going forward on the furnace building and starting on the office, stores and locker structures.

One of the important Federal building projects is the $1,000,000 Southern regional research laboratory to be established at New Orleans, La. To be a U-shaped layout of three stories and above ground basement, this structure will be finished in light colored brick and include, in addition to office and vast laboratory spaces, a separate power plant. Upon its completion a staff of 250 employes will conduct studies on new uses for surplus farm commodities of the South.

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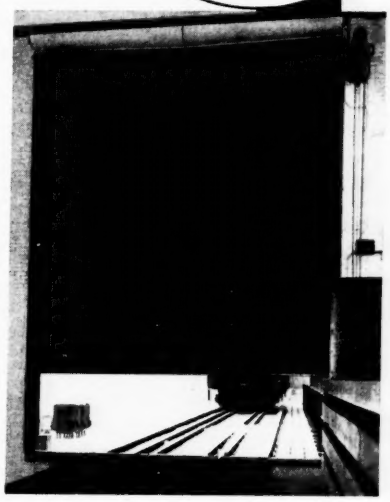
EXECUTIVE



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Iron, Steel and Metal Market

STEEL operations at the close of April were at the rate of 48.6 per cent of capacity. A month previous mills were running at 56.1 per cent. Conservation of fuel made necessary by the coal tie-up accounted in part for the slowing down, and in the absence of imperative demand it is not usual as summer approaches to build up large inventories of raw materials. Production of finished products has been holding better and showing moderate increases in percentages in tin plate as well as galvanized sheets.

Chairman Stettinius of U. S. Steel, in his report for the first quarter of 1939, called atttention to the net earnings of 18 cents per share on the preferred stock of the corporation in contrast with $1.22 per share earned in the last quarter of 1938. As to deliveries which were 9.7 per cent above the preceding quarter, this increase "was less than the normal seasonal expectation." He pointed out, however, that "there is satisfaction in the fact that the greater tonnages shipped permitted steadier employment and better working schedules." In March of this year approximately 211,000 were on the payroll. The preceding quarter's total was 207,000 at the close.

Consolidated net profit of Republic Steel Corporation and subsidiaries for the first quarter of 1939, after deduction of all charges, was $532,899. This compares with a net loss of $3,062,564 in the first quarter of 1938.

The Outlook

Conditions in iron and steel production reflect to an accurate degree general conditions in the capital goods industry. Hesitation in buying, uncertainty as to the course of government which present problems to all business as a bar to long time planning, have their effect here as elsewhere.

There is encouragement in the increasing business of automobile manufacturers, as well as in the ship building program and the gradual improvement in the railroad situation. The carriers are showing somewhat better earnings and as they emerge from their dilemma with the ability to enter the market for equipment and needed supplies the effect upon iron and steel will be immediate and marked.

A revival in the construction and building industry is overdue, and an expanding road building program is one of the favorable certainties that will care for increasing supplies of reinforcing steel and bridge material.

The plants of the industry have been improved and enlarged, and the vast expenditures of money for this purpose in the recent past indicate at least that in the judgment of the executives responsible, the demand to come will require the increased capacity that has been made available.

The Situation at Birmingham

There has been a slight drop in rate of operations at Birmingham where production has been maintained throughout the depression at a higher point than at other centers, but the reduced percentage of output has been comparatively slight. Demand is reported as "relatively" good.

This is unquestionably due to the expanding market in the Southern states and the modern facilities of the area's plants. There has been too an unflagging effort to meet all requirements of customers with exactness and promptness.

As an illustration of adaptability to meet new conditions, the Tennessee Coal, Iron and Railroad Company has entered the building field with complete plans and equipment to supply the farmer and small home owner with steel houses, barns and buildings of steel. They are economical in first cost and upkeep. Ingenious planning of interiors provides protection from heat and cold and ventilation, besides practical "livability" to an unusual degree. It is more than likely that this venture will meet effectively a real need of farmers and home buyers.

Structural Steel

New orders for fabricated structural steel booked during March showed a 10 per cent improvement over the preceding month according to the American Institute of Steel Construction. The tonnage booked was 272,160 tons, compared with 221,721 tons booked in the first three months of 1938. Shipments during March were larger than for any month of the last fifteen.

The new business booked by this industry in this year's first quarter is 40.7 per cent of normal, using the index of the Department of Commerce of 1923-1925 as 100.

The forty-eighth general meeting of the American Iron and Steel Institute will be held May 25 at New York.

T. M. Girdler, chairman of Republic Steel Corporation and president of the Institute, will deliver the opening address. Other speakers at the opening session will be B. F. Fairless, president of U. S. Steel Corporation, and Arthur Roeder, chairman of the Colorado Fuel & Iron Coropration.

At the annual meeting of Bethlehem Steel Corporation, president Eugene G. Grace reported to stockholders that the profits of the first three months of this year were better than for the same period of last year, totalling $2,409,059, compared with $994,908.

The company had orders on hand of $192,040,906 March 31, which was a record high for peace time. The corporation's ship yards are operating at full capacity.

The president commented on the investment of common stockholders in Bethlehem as being between $325,000,000 and $350,000,000, and entitled to a larger return.

Foreign Orders

The total of iron and steel (except scrap) exports from the United States in March jumped 20.3 per cent in quantity and 28.6 per cent in value over February, according to preliminary figures of the Bureau of Foreign and Domestic Commerce.

Great Britain has placed orders with manufacturers in this country for 100,000 tons of hot-rolled sheet steel intended, it is said, for air raid shelters. Deliveries are to be completed by June 15 and additional contracts are anticipated. Steel plants of Britain are crowded to capacity on account of armament requirements. The orders placed here will be distributed to get deliveries at an early date. It is also reported that England is asking prices and delivery dates in barbed wire, but at the time of going to press this lacks confirmation.

The Netherlands also are said to have placed substantial orders in the United States for sheet steel to serve as bomb proof shelters.

THE INDUSTRIAL SOUTH

Louisiana

The land of liquid gold

FEW regions in this country have a natural heritage comparable to that of Louisiana. Mineral wealth in oil, discovered within recent years, gives added impetus o an industrial growth which ranks high in the industrial development of the South as a whole.

Louisiana boasts some of the most productive individual oil wells in the world, and ranks third in oil production among the Southern States. Bethlehem Steel Company through its Maryland Plant at Sparrows Point, near Baltimore, and other nationwide facilities supplies wire rope, sucker rods, casing, and many other steel products for use in Louisiana's rich oil fields. Other rapidly growing Louisiana industries find Bethlehem an equally satisfactory and dependable source of supply for virtually every form of steel required in their operations.

Did you know?

That Louisiana has 3,771 miles of navigable streams.

That improved methods of rice culture have in the past ten years helped to increase the value of Louisiana's rice crop by two and one-half times.

That Louisiana has 40 per cent of all the cypress in the country, and produces 2,270,000,000 board feet of lumber of all kinds each year.

That 80 per cent of the country's men's washable suits and half of its industrial alcohol are manufactured in New Orleans.

BETHLEHEM STEEL COMPANY

BETHLEHEM STEEL

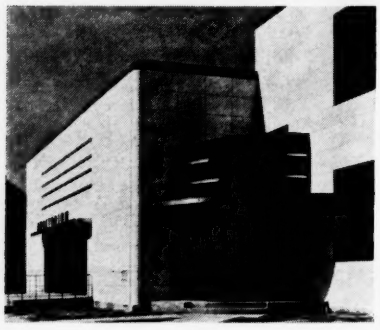
New Ways of Doing Things

New Development in Welded Chains

Employing a new electric welding process in its manufacture in which the temperature of the weld and pressure of the electrodes are automatically controlled, a new welded chain, designated the ENDURWELD, is announced by the American Chain & Cable Company, Inc., York, Pa. The weld is at the end of the link and is thus protected from damage, especially when the chain is used over sharp corners. For corrosion resisting services, chain is made from stainless steel, Monel metal or Everdur bronze. At present Endurweld chain is being fabricated in all standard types of Sling Chains in which all attachments are made from the same material used in the chains. It is also furnished in continuous lengths.

Porcelain Enamel Buildings For Uncertain Soil Foundations

In a Pennsylvania mining region a few years ago, D. H. Grootenboer and Philip G. Knobloch, architects who had settled in Pottsville, Pennsylvania, discovered



Section of Porcelain Enamel School Building

that most of the school buildings in the section were of frame construction and nothing more than fire traps. The reason for this slight construction was that earth movements brought about by subsurface mine workings caused buildings to lean precariously and finally collapse. Grootenboer and Knobloch tackled the problem of designing a building that would overcome this territorial peculiarity by combining light weight, practical cost and non-inflammability. After three years of research and tests they named porcelain enamel as the answer.

These findings were applied when the architects were commissioned to build a new school at Girardville, Pa., of which the auditorium section of the unit is shown. The structure is said to be the world's first all-porcelain enamel school, and is not only substantial but attractive, being finished in the school colors of oyster white and dark blue, relieved by a trim of Enduro Stainless Steel, a product of Republic Steel Corporation of Cleveland, Ohio. The enameling on the installation was done by Enamel Products Company, also of Cleveland, on 18-gauge Toncan Iron Enameling Sheets, another product of Republic Steel Corporation.

First Public Automatic Telegraph

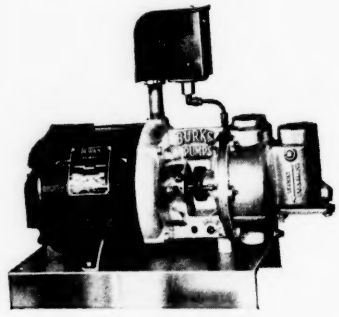
Early in May the world's first public automatic telegraph is expected to be put into service at the Golden Gate International Exposition, according to the Western Union Telegraph Company. The new device, located in the Western Union exhibit and at various points throughout the grounds, will handle most of the telegraph business from Treasure Island to the main office in San Francisco. The unit transmits by "scanning" an exact facsimile of any message in ink, pencil or typewriting, and is capable of transmitting 15 square inches of matter in one minute, the received message requiring no processing. The sending instrument is contained in a small cabinet, occupying a minimum of space. In sending a telegram only two operations are necessary. A push-button opens a message slot in the small cabinet and the message is dropped into the slot. Electricity then wraps the message around a cylinder; scans it with an electric eye which flashes impulses to the receiving station in the main office; peels the message from the cylinder, and drops it into a container in the cabinet.

"Big Tent" Now Air Conditioned

In the early days of air conditioning as it was applied for the comfort of occupants of office buildings, stores, banks and other commercial structures, the announcement that air conditioning would be provided in such a type building excited more than passing interest. It was significant news, because it pointed to a wide range of possibilities of air conditioning as the industry developed. But it is probably true that no one at that time ever thought of seeing it applied to a circus tent. Yet it has happened. Ringling Brothers and Barnum and Bailey Circus has closed a contract with Buffalo Forge Company, Buffalo, N. Y., for comfort cooling for the "big tent." It is believed that this is the first time that air conditioning has been applied to a tent—certainly one of this size. Eight complete sets of equipment will be required, each mounted on a trailer truck, and through 16 huge diffusers, cooled air will be discharged into the tent. Exhaust facilities will permit withdrawal of approximately the same amount of air, so that a constant supply of cooled air will be provided. Equipment carried on each of the trailers consists of a Buffalo CL Fan and special Buffalo Air Washer with compartments and Aerofin heating coils. Two circulating pumps will spray cold water, obtained by melting tons of ice per hour, into the Buffalo air washer through which the air to be cooled will circulate. In chilly weather, an oil fired boiler will provide steam for heating coils which will permit raising the temperature in the tent.

Burks Super Niagarette Pump Additions

Three new larger Super Turbine Pumps have been added to the popular Burks Super Niagarette series, according to Decatur Pump Company of Decatur, Ill. The new pumps employ the patented BURKS "One Moving Part" design and have rated capacities of 750, 950 and 1350 G. P. H. They are available as complete factory assembled systems with 42-gallon storage tank; complete systems with separate fittings and storage tanks of capacities from 42 to 315 gallons, and independent pumping units with heavy channel iron base, either with or without pressure switch. Built for heavy duty service, integral mounted, they are powered by ½, ¾ and 1 horsepower heavy duty Wagner repulsion-induction brush lifting type motors — coupled close to the pump for peak pumping efficiency. The heavy duty Cutler-Hammer Pressure Switch assures control of pressures at all times.



Larger Burks Super Turbine Pump

Link-Belt 1939 Line of Stokers

At a recent engineering conference, J. E. Martin, manager of the Stoker Division, Link-Belt Company, Chicago, Ill., declared that "further development of functional design, both in engineering and in appearance, is a characteristic of the Link-Belt line of residential and commercial stokers for 1939." The 1939 stokers are larger and heavier, with greater hopper capacity, but with no sacrifice of low filling height. Transmission compartment and the inside of the hopper are sprayed with aluminum-color rust-resisting compound. The hopper lid is unusually heavy and rigid, and the louvres for the air intake are located in the black panel instead of at the side. The color of the unit is maroon, in two shades, trimmed with chromium and black.

Telephone and Know

before you go

Next time you plan an out-of-town trip, pick up your telephone, before you pick up your handbag. Use Long Distance to arrange definite appointments with the men you want to see.

They will be better prepared for your visit—and so will *you*. You'll accomplish more in each interview. And you'll save yourself long hours of waiting for prospects who are busy, or customers who are away.

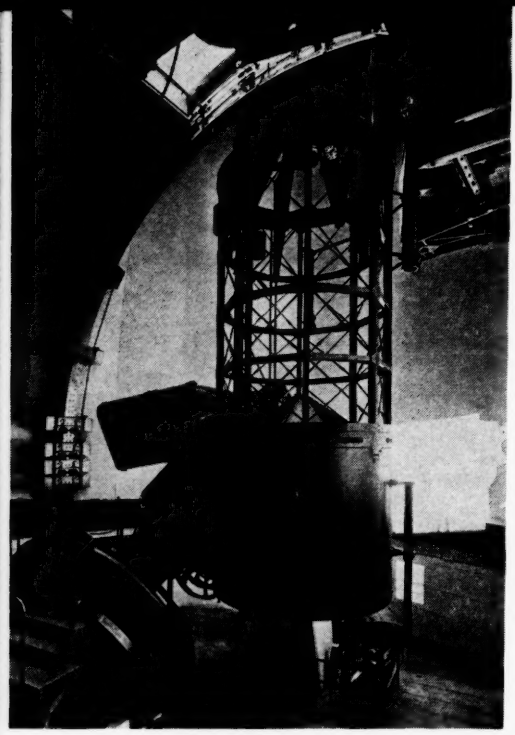
Long Distance appointments prevent disappointments—*and much more than repay the little they cost!*

HERE'S HOW LITTLE IT COSTS TO TELEPHONE!

BETWEEN THESE POINTS	DAY except SUNDAY*	NIGHT and SUNDAY*
Cincinnati, Ohio — Louisville, Ky.	$.50	$.35
Philadelphia, Pa. — Boston, Mass.	1.00	.60
Chicago, Ill. — Minneapolis, Minn.	1.20	.75
Los Angeles, Calif. — Salt Lake City, Utah	1.75	1.05
Indianapolis, Ind. — New York, N. Y.	1.95	1.20

*3-minute station-to station rates. Reduced rates run from P.M. to 4:30 A.M. every night and all day Sunday.

BELL SYSTEM — AMERICAN TELEPHONE & TELEGRAPH CO. AND ASSOCIATED COMPANIES



The 75-ton telescope at McDonald observatory, 6,800 feet up in the Davis Mountains of Texas. The 82-inch telescope lens which required four years to grind and polish, was shipped from the Corning Glass Works. Work was financed from the proceeds of an $800,000 trust fund willed to the University of Texas by William J. McDonald, banker, of Paris, Texas.

Trend Toward Domestic Cigarette Paper Production

The value of cigarette paper imported into the United States in 1938 totaled $4,000,000, the Forest Products Division of the Department of Commerce reports. The volume of these imports aggregated 16,010,768 pounds. In addition, 1,143,000 pounds of cigarette paper in books and covers were imported.

Practically the entire volume of U. S. cigarette paper requirements are normally supplied by France. French cigarette paper is manufactured almost exclusively from flax, which is normally supplied by Soviet Russia. Experts in this country have maintained that French cigarette paper is superior in quality to that manufactured in the United States due to the peculiar mineral content of the water used in the manufacture of the paper in France.

Many observers, however, have long maintained that an excellent grade of cigarette paper could be produced in the United States and recent trends point to a larger domestic production. One large cigarette paper mill is now in the process of construction in western North Carolina, which, when completed, is expected to have a capacity sufficiently large to supply approximately one-third of the domestic requirements in this country. It is reported that the new mill will utilize domestically-grown flax from California, Oregon, Minnesota, and the Carolinas.

A second large paper company, long known as a producer of high-grade rag paper, is also actively engaged in research looking toward commercial cigarette paper production and both companies are devoting special studies to supplies and properties of water.

The Timber Resources of the South, Part I

(*Continued from page* 38)

17,870,000,000 board feet of softwoods and 5,570,000,000 board feet of hardwoods. These in turn comprise 8,530,000,000 board feet of old growth softwoods, 9,340,000,000 board feet second growth softwoods, 4,480,000,000 board feet old growth hardwoods, and 1,090,000,000 board feet second growth hardwoods. By species, the saw timber stand contains approximately 13,380,000,000 board feet Southern pine, 3,875,000,000 board feet cypress, 1,370,000,000 board feet oak, 1,590,000,000 board feet tupelo and black gum, 1,000,000,000 board feet red gum, and 1,600,000,000 board feet miscellaneous hardwoods.

In terms of cords, the saw timber area contains 36,585,000 cords — 19,115,000 cords of softwood and 17,470,000 cords of hardwood. If to this is added the cordwood area of 2,710,000 acres containing 7,650,000 cords of softwood and 2,505,000 cords of hardwood, or 10,155,000 cords together, the total supply of all timber on commercial forest land is 46,740,000 cords exclusive of the quantity on reforested areas.

Georgia

The amount of forest land in Georgia is 21,430,000 acres compared with a total land area of 37,584,000 acres, but of this forest land commercial forest covers 21,035,000 acres and saw timber occupies only 11,365,000 acres—2,555,000 acres old growth and 8,810,000 acres second growth.

The saw timber stand amounting to 45,800,000,000 board feet, includes 33,400,000,000 board feet of softwoods (6,805,000,000 board feet old growth and 26,595,000,000 board feet second growth) and 12,400,000,000 board feet of hardwoods (6,025,000,000 board feet old growth and 6,375,000,000 board feet second growth).

Southern pines with some 31,080,000,000 board feet are the predominating species in the saw timber stand. Other kinds of wood are: cypress, 1,130,000,000 board feet; tupelo and black gum, 2,520,000,000 board feet; oaks, 3,665,000,000 board feet; red gum, 2,410,000,000 board feet; yellow poplar, 1,230,000,000 board feet; and miscellaneous hardwoods and softwoods, 2,570,000,000 and 1,190,000,000 board feet respectively.

The cordwood area of 3,755,000 acres contains 16,840,000 cords or 10,605,000 cords of softwood and 6,235,000 cords of hardwood, while the cordwood volume of the saw timber area amounting to 72,370,000 cords (31,120,000 cords of softwood and 41,250,000 cords of hardwood) bring the total state supply to 89,210,000 cords. In addition there are almost 2,000,000 cords located on restocking areas.

Kentucky

There are 25,716,000 acres in the land area of Kentucky, yet the forest land is confined to 9,480,000 acres and of this latter 9,400,000 acres are regarded as commercial forest.

In contrast to the majority of other Southern States, the cordwood area of Kentucky, amounting to 4,230,000 acres far exceeds the saw timber area of 2,820,000 acres. With 820,000 cords of softwood and 8,220,000 cords of hardwood, the total volume on the cordwood area is 9,040,000 cords, which together with the saw timber area, containing 13,740,000 cords or 1,940,000 cords of softwood and 11,800,000 cords of hardwood, gives a total state supply of about 22,900,000 cords.

The saw timber area comprising 565,000 acres old growth and 2,225,000 acres second growth, supports a total saw timber stand of 9,750,000,000 board feet or 1,250,000,000 board feet in softwood and 8,500,000,000 board feet in hardwood. Approximately 500,000,000 board feet of softwoods and 4,000,000,000 board feet of hardwoods are old growth, while second growth softwoods and hardwoods are 750,000,000 and 4,500,000,000 board feet respectively.

Oaks are the predominant species in the saw timber stand of Kentucky and amount to some 4,200,000,000 board feet. Other important kinds of wood with their quantity are: yellow poplar, 950,000,000 board feet; beech, birch and maple, 740,000,000 board feet; Southern pines, 650,000,000 board feet; and hemlock, 380,000,000 board feet. Miscellaneous varieties account for 2,610,000,000 board feet of hardwoods and 220,000,000 board feet of softwood.

"What Helps Business Helps You"

In a recent radio address Mr. Wendell L. Wilkie, president, Commonwealth and Southern Corporation, speaking on the subject, "What Helps Business Helps You," said:

"The industry in which I work offers many stories of that sort because it has grown so fast in the past thirty years. Only a relatively few people had electricity at the beginning of this century. Today some 26,000,000 families use it. The Commonwealth & Southern System, with which I am associated, recently sold one of its companies to the government —the Tennessee Electric Power Company—because otherwise the company would have been destroyed by the competition of the government's power enterprise, the Tennessee Valley Authority.

"The story of this Tennessee Company is like that of many others. There was little electricity in the State of Tennessee in 1904. There was an engineer in Chattanooga, however, who saw the possibility of converting the Tennessee River into useful power for the people of the Tennessee Valley. He wanted to build a dam across that river. Of course, the people said what they always say

(*Continued on page* 66)

THE SOUTH
in facts and figures

THE NATION'S OPPORTUNITY

THE 1939 BLUE BOOK OF SOUTHERN PROGRESS, with its facts and figures about the South, will be the first issue following the statement of the President of the United States last July when he urged a conference of certain Southern men to draft a report of economic conditions in the South. He stated, "It is my conviction that the South presents right now the nation's No. 1 economic problem, the nation's problem, not merely the South's."

Twenty days later the Committee's report was made public. One member said it presented "a pitiful picture of conditions in the South." The report caused wide-spread resentment and discussions. Well-known publications in addition to MANUFACTURERS RECORD, such as the United States News, the Saturday Evening Post, Fortune, Sales Management, and newspapers generally throughout the land, made extensive replies . . . In many instances, material from the 1938 BLUE BOOK OF SOUTHERN PROGRESS was used by these publications and other organizations in refuting with factual information the Committee's stigmatic statements. As these facts become known, there is a growing conviction that

the South is the nation's opportunity.

BLUE BOOK OF SOUTHERN PROGRESS

Published annually by

MANUFACTURERS RECORD PUBLISHING COMPANY

BALTIMORE, MARYLAND

To be published about June 15, 1939

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"We have been able to collect accounts that otherwise we would have been unable to collect . . . giving us immediate use of funds due us . . . of material assistance to a great many of our customers in taking care of their obligations . . . relieves the strain on the dealer who has been hard-pinched but is honest . . . are much pleased with the results . . . "

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THE MORRIS PLAN

RICHMOND
PETERSBURG
NEWPORT NEWS
ROANOKE
NORFOLK

TOTAL RESOURCES $23,000,000

» » » *Finance* « « «
AND KINDRED SUBJECTS

Two Dispatches

No. 1—"Tennessee loses $3,500,000 tax revenue by sale of private utilities to T. V. A. according to Tennessee Taxpayers' Association."

No. 2—"The T. V. A. announced today it would increase tax payments to Tennessee and Alabama to compensate the states for loss of revenue through sale of privately owned electric utilities."

Query—Where is the money to come from?

Help for the Railroads

As this is written it appears likely that the Chandler bill now before Congress has a good chance of passing. This bill permits voluntary adjustment of interest and dividends to holders of railroad securities without resorting to receivership or bankruptcy proceedings. The bill has passed the House and is scheduled for early consideration by the Senate Committee.

Regardless of recent encouraging increases in carrier revenues, it will hardly be disputed that by reason of competition and vast increases in taxation, the railroads must have relief from some of their capital interest obligations. The alternative of government ownership will have little appeal even to those who have large investments in railroad obligations.

The Danger Point

The Bookings Institution, engaged in research in "capital expansions, employment and economic stability," sees the need of increasing the national income if the debt is to go higher. In a preliminary report on taxation, the Institute is quoted as follows:

"The danger point in public debt is that point at which it becomes difficult, as a practical matter to bring the budget into balance. Unless we can promptly secure a substantial increase in national income it will be necessary to conclude that the United States has already reached the danger point in the growth of public indebtedness."

Taxes and Income

An analysis made recently by the *Wall Street Journal*, covering sales and tax payments of all kinds of thirty-eight typical industrial organizations, developed a number of interesting facts from which the following are taken:

Manufacturers last year spent about 16 days working for tax collectors; 14 days working for stockholders, and the remaining 270 days trying to earn enough to pay wages, salaries, material costs, interest and other expenses of doing business.

Total sales of the companies were $5,464,659,000; aggregate net profit was $258,112,000, and taxes were $286,591,000.

The National Industrial Conference Board reports that taxes took 22 per cent of national income in 1938.

Auto Sales

An encouraging factor in the present business situation is the increased output and sales of motor cars as compared with a year ago. Sales for the first quarter of 1939 were approximately 45 per cent above the same period of the year previous, and production for the second quarter it is expected will be maintained at one million cars.

Dealers' stocks are not excessive and the opinion is expressed by General Motors' Chairman that the outlook is favorable.

(*Continued on page 52*)

NATURAL GAS

A fuel whose value has been proven by years of use in a most diversified line of industrial applications.

Natural gas has created the possibility of effortless comfort by the facility, and economy with which it fits into the home.

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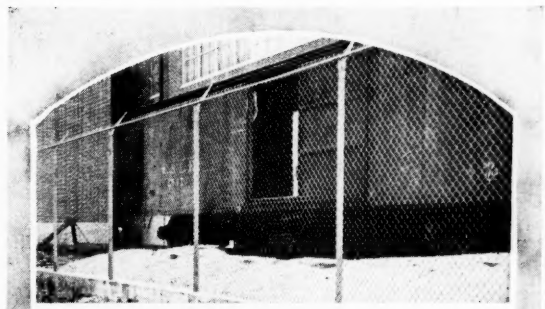

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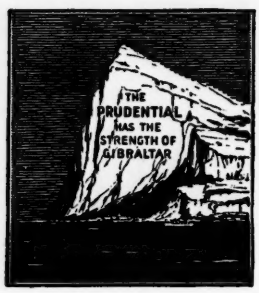


THE PRUDENTIAL
INSURANCE COMPANY OF AMERICA
HOME OFFICE: NEWARK, N. J.

"Finance and Kindred Subjects"

(*Continued from page* 50)

Member Banks and Government Bonds

The consolidated statement of member banks of the Federal Reserve System in 101 leading cities for the week ended April 19th, showed increased holdings of Government bonds of $38,000,000—to a total of $5,901 million. Treasury notes held totaled $2,015 million, and obligations guaranteed by U. S. Government, $2,030 million.

Reserve balances with Federal Reserve Banks increased $234,000,000. Excess reserves are at an all-time high of $4,000,000,000.

Vanishing Frontiers?

An idea of the magnitude of the business of making airplanes is gotten from figures given out recently by Glenn L. Martin Co. of Baltimore. New business entered during the first three months of 1939 is double the total sales of the whole of 1938. The backlog of orders—the highest in the industry—is more than $39,000,000 as compared with $13,866,153 one year ago.

Plant expansion is under way providing nearly 500,000 additional square feet and when completed total number of employees may reach 10,000.

Current assets March 31 were $10,978,689, and current liabilities $2,850,022.

Employment Insurance

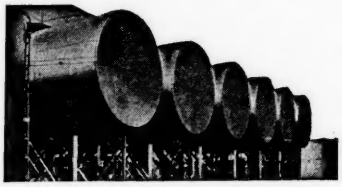
According to the *Journal of Commerce of New York*, unemployment insurance compensation has done nothing to lessen expenditures for relief. It is estimated that as many as 90% of those who receive unemployment benefits have never been on relief rolls. They're people who have financed themselves or obtained aid from relatives when out of work before.

While very little official recognition has been taken of the practice, it is current gossip that recipients of unemployment benefits in many instances, make no effort to secure new employment until all of the benefit payments to which they're entitled have been spent. Unless immediately successful in obtaining a new job, they become eligible for relief and tend to swell the parasite class. Nation-wide unemployment benefits payable this year are estimated as high as $400,000,000, but only a small fraction of this, if any, will be saved in relief outlays.

Social Security

The practice of diverting payments collected under the Social Security Act to meet current expenses of Government has been the subject of bitter criticism for some time. Another radical change in the method of handling these trust funds is now proposed. Under the latest recommendation of the Social Security Board, there's no guarantee that individual employees will ever benefit from their compulsory contributions to the fund. The House Ways and Means Committee has agreed tentatively to at least partial abandonment of the theory that old age insurance benefits "are payable as a matter of right." This departure is proposed to give the Board discretionary power in determining relative need in individual cases, making benefit payments in proportion, with the result that many persons making contributions would receive no benefits. So far, the proposal would include only the contributions made by unmarried persons who died before the age of 65. In that case, the contributions made would be confiscated and put into the reserve fund.

SOUTHLAND PRODUCTS
—WELDED OR RIVETED—



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Roads and Buildings
Filter Gravel, all sizes—Building Bricks
FRIEND & CO., INC. River St., Petersburg, Va.

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LYNCHBURG, VA.

You can judge a firm by performance! Our experience in the field of elevated steel water tanks includes a complete line of tanks ranging from 5,000 to 2,000,000 gallon capacity.

We also manufacture tanks of other types for all purposes, as well as towers, standpipes, vats, boilers, etc. Let us know your needs in fabrication! WRITE FOR "TANK TALK" NO. 25-D.

Tank Builders For Over 80 Years!

R. D. COLE MANUFACTURING CO.
ESTABLISHED 1854
NEWNAN — GEORGIA

WOOD TANKS
Wood Stave Pipe

THE BALTIMORE COOPERAGE TANK & TOWER CO.
Baltimore, Maryland
The Largest Works of Its Kind in the South

61 YEARS OF WOOD-TREATING EXPERIENCE

are behind the service of Eppinger and Russell Co. Industrial and commercial lumber of all kinds is made immune to termites and dry rot by pressure-treating with ZMA or Creosote. Consult Eppinger and Russell Co. on your requirements in poles, posts, piling, cross ties, cross arms and other timber. It will add 8 to 20 times the natural life to any woods you have treated by this low-cost, dependable process.

PRESSURE-TREATING PLANTS AT:
Jacksonville, Fla. and Long Island City, N. Y.

WOOD PRESERVERS SINCE 1878
EPPINGER AND RUSSELL CO.
84 Eighth Ave., New York City

INDUSTRIAL NEWS

Tennessee Coal and Iron Appointments

C. I. Auten has been appointed manager of sales of the Cold Formed Steel Division of the Tennessee Coal, Iron and Railroad Company, Birmingham, Ala., according to announcement by M. H. Geisking, vice president and general manager of sales. Formerly a sales engineer, Mr. Auten will direct sales activity pertaining to the use of cold formed steel products in eight Southeastern states, with particular emphasis upon materials for prefabricated steel dwelling houses and farm buildings. He was formerly vice president of Truscon Steel Company of Youngstown, Ohio, and joined the Tennessee Company last March. C. H. McKenna, also a former sales engineer, has been named assistant to the manager of sales in the Cold Formed Steel Division.

National Metal Trades Association

The Forty-First Annual Convention of the National Metal Trades Association will be held at The Palmer House, Chicago, Illinois, on May 24 and 25. Subjects to be discussed will deal with industrial relations problems. National offices of the Association are at 122 South Michigan Avenue, Chicago, and the Eastern Office at 60 East 42nd Street, New York.

Carborundum Company Appointment

The appointment of John Storm as District Sales Manager at New York of The Carborundum Company, Niagara Falls, N. Y., has been announced by Vice President Charles Knupfer. Mr. Storm's headquarters will be at the company's branch warehouse and sales offices at 601 West 26th Street, handling sales activities in the Metropolitan New York area. He succeeds Frank J. Harrington, who has been transferred to the Sales Department at Niagara Falls. Previously, Mr. Storm was a member of the sales staff at Detroit.

Harnischfeger Appointments

Recent appointments announced by Harnischfeger Corporation of Milwaukee, Wis., include the following: Owen-Richards Company, 1007 Second Avenue North, Birmingham, Ala., exclusive agents for the sale of P & H Hoists in the northern half of Alabama, operating under the supervision of the Harnischfeger Memphis office; Service Machine and Iron Works, Inc., 1047 Magazine Street, New Orleans, La., exclusive agents for the sale of P & H Hoists and Trav-Lift Cranes for Louisiana and the southern part of Mississippi, also operating under supervision of the Memphis office. The company also announces that the new location of its Washington (D. C.) office is in the Normandy Building at 1626 K Street, Northwest, handling sales of all Harnischfeger products, including excavators, overhead traveling cranes, hoists, welders and welding electrodes.

Progressive Welder Transfers Aulerich

A. J. Aulerich, identified with Progressive Welder Company of Detroit, Mich., in the development of what is declared to be the first Hydromatic Welder ever built, and for the past four years in the company's Detroit sales and service division, has been transferred to Dayton, Ohio, where he will handle sales for the company in both Ohio and Indiana. His offices will be at 503 Callahan Building, Dayton.

(*Continued on page 56*)

Write for this interesting folder of the East Coast of Florida

In addition to general agricultural information the folder contains interesting data on temperatures, rainfall and crops as well as a brief description of each of the Florida East Coast counties.

Write for your copy

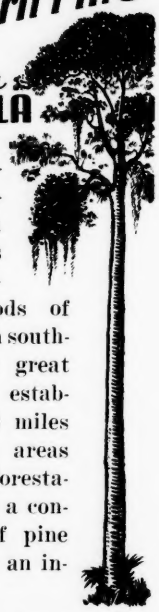
Model Land Company

Flagler System

St. Augustine, Florida

There's Gold in Southern Pine

***—and there's pine near* PENSACOLA**



One of the outstanding developments in the South during recent years has been the discovery of methods of making paper from southern pine. Three great mills have been established within 150 miles of Pensacola in areas where, through reforestation, there will be a continuous supply of pine for these mills for an indefinite period.

Vast areas of pine forest in the vicinity of Pensacola would merit the investigation of a paper manufacturer considering the establishment of a new plant in the South.

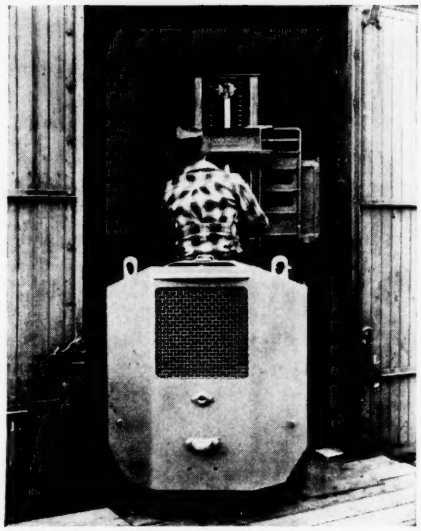
This is just one of the many opportunities which awaits industry and commerce at Pensacola. For further information address Municipal Advertising Board, 22 West Garden Street, Pensacola, Florida.

There's Opportunity in — —

PENSACOLA

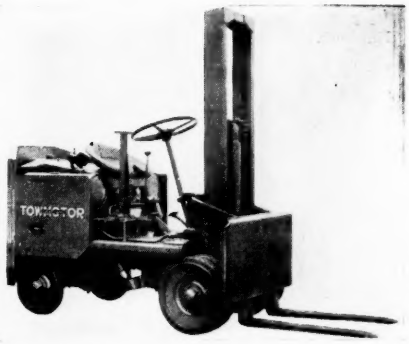
FLORIDA - *On the Gulf*

CAR LOADERS?



New Model C-L, 47" wheel base, load cap. 4000 lbs.

Yes!



Standard Model L, 56¼" wheel base, load cap. 6000 lbs.

WE'VE BUILT THEM FOR 6 YRS.

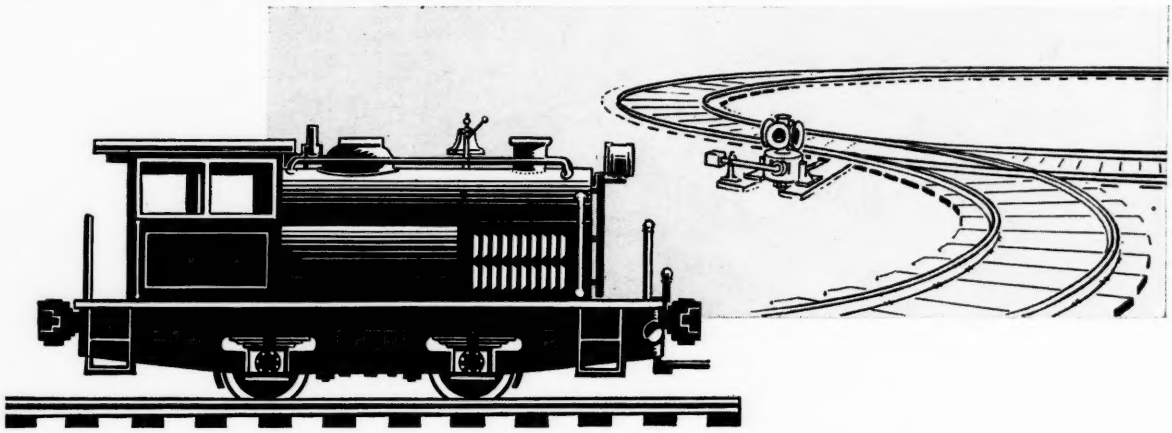
Carloading is not new to TOWMOTOR. For over 20 years TOWMOTOR Tractors have been used to push and pull freight in and out of box cars. For 6 years TOWMOTOR Lift Trucks have been doing it. Now TOWMOTOR offers a still shorter and more condensed lift truck for carloading, as well as other handling operations. The new Model C-L has a shorter—47"—wheel base with load cap. of 4000 lbs. Built with single or telescopic mast. Equipped with forks, flat plate or ram. All vital operating parts standard and interchangeable with other models. No cheapening of construction—no reduction in size of vital operating parts. Just a shorter machine to turn in a smaller radius, operate in still closer quarters and still offering the lowest cost per ton moved. Write for new bulletin of action pictures today, explaining your requirements so we can send specifications on model best suited to your needs.

TOWMOTOR CO., 1237 E. 152nd St., Cleveland, Ohio

Southern Sales Offices: E. Deane Harrington, 17 Guilford Ave., Baltimore, Maryland. Phone: Plaza 4262. L. S. Teaque Equipment Co., 1331-1333 West Adams St., Jacksonville, Florida. Phone: 5-4864. Wharton L. Peters, St. Louis Mart Bldg., St. Louis Mo. Phone: GA. 3050. James J. Alvarez, Merchants National Bank Bldg., Mobile, Alabama. Phone: DExter 5882. C. G. Forshey, 909 M & M Building, Houston, Texas. Phone: CApital 5525. McVoy-Hausman Co., 2019 Sixth Ave. North., Birmingham, Alabama. Phone: 7-5561.

TOWMOTORS CLEVELAND

PIONEERS OF STRAIGHT GAS POWER AND SEATED CENTER CONTROL FOR 20 YRS.



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GASOLINE MECHANICAL DRIVE
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DIESEL OR
GASOLINE ELECTRIC DRIVE
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ELECTRIC STORAGE BATTERY
▪
ELECTRIC TROLLEY

The Whitcomb line of internal combustion and electric locomotives combined with a complete line of Baldwin steam locomotives, permits us to offer the best type of power for your service.

Let our engineers survey your requirements and give you their unbiased recommendations. No obligations of course.

The Whitcomb Locomotive Company (Plant at Rochelle, Illinois). All sales and engineering by The Baldwin Locomotive Works, Paschall Post Office, Philadelphia, Pennsylvania.

WHITCOMB LOCOMOTIVES

SUBSIDIARY OF THE BALDWIN LOCOMOTIVE WORKS

INDUSTRIAL NEWS

(*Continued from page 54*)

Promotion and Appointments

Manning, Maxwell & Moore, Inc., of Bridgeport, Conn., announces the appointment of Henry Jude as General Sales Manager of the Locomotive Equipment Division to succeed C. H. Butterfield, who was recently made vice president in charge of sales of the Industrial and Locomotive Divisions. Mr. Jude, a mechanical engineer, has been associated with the corporation for the past thirty-three years.

Two new sales appointments to the Texas oil district have been announced as follows by the Corporation: Fred Crabbe takes over the Midland territory and Carl Davis will contact the Houston area. Mr. Crabbe, a graduate of Tulsa University, spent several years in chemical research with the Mid-Continent Refinery, while Mr. Davis, a mechanical and sales engineer, has spent the past ten years in the petroleum industry, representing Joy & Cox of Denver for several years, and was more recently with Joseph A. Coy Company of Tulsa.

Koppers Company Activities

One million pounds of bronze castings are to be supplied by Koppers Company's Bartlett Hayward Division, Baltimore, Md., for various shafts of the Delaware water shed under construction by the New York City Board of Water Supply from the Delaware lakes to the city of New York. The water main is about 15 feet in diameter for nearly 200 miles, representing the largest water supply system in the world. The project will cost $200,000,000 completed.

The Bartlett Hayward Division will also fabricate six slide gate valves of a special bronze alloy to resist the corrosive effect of the polluted water in the new Mahoning flood control dam above Pittsburgh. Each gate will be 10 feet by 5 foot, 8 inches, and all are to be delivered within 180 days from date of contract.

Hercules Moves New York Office

Effective May 1, the New York office of Hercules Powder Company, Wilmington, Del., will be located at 500 Fifth Avenue, according to announcement by W. M. Annette, who is in charge of the New York office. Rex St. Clair will be manager of explosive sales and G. C. O'Brien will continue as manager of naval stores sales and as supervisor of general office activities.

Cooper-Bessemer Appoints Condit Control Engineer

With close control a vital factor in almost every phase of modern manufacture, The Cooper-Bessemer Corporation of Mt. Vernon, Ohio, announces the appointment of Paul A. Condit as Control Engineer, in which capacity his efforts will be applied toward closely coordinating Cooper-Bessemer gas and Diesel engines, as prime movers, to various manufacturing processes. Mr. Condit is a member of the A. I. E. E. and a professional electrical engineer, having received his scholastic training at Denison, Ohio Northern and Cincinnati universities. His headquarters will be at Mt. Vernon, in the offices of the Corporation, where he will endeavor to effect a close liaison between the sales and engineering departments in control system problems, making his services available to all branch offices and sales representatives.

Allegheny-Ludlum Promotes Pravel

Allegheny-Ludlum Steel Corporation, Pittsburgh, Pa., announces the appointment of W. F. Pravel as district sales manager of the company's Houston territory, effective April 1. Joining the company in 1934, Mr. Pravel worked in the sales office at St. Louis, being transferred in 1937 to Dallas, where he remained until the present appointment. Prior to his connection with Allegheny, he was with Benton & Anderson Company, Detroit, and after this served as Southwestern Manager of Ohio Seamless Tube Company, Shelby, Ohio.

Seaboard Appoints Industrial Forester

Succeeding A. E. Wackerman, resigned, who has accepted a position with the School of Forestry, Duke University, Charles A. Gillett has been appointed Industrial Forester of the Seaboard Air Line Railway, according to announcement by Warren T. White, General Industrial Agent, Norfolk, Va. The appointment of Mr. Gillett, whose headquarters will be at Norfolk, is in furtherance of the forestry program inaugurated by the Seaboard about two years ago to promote sound forestry practice to the end that a continuing supply of timber may be available in the territory for sawmills, pulp and paper plants, and other timber using industries. Mr. Gillett is a graduate of Cornell University.

Republic Steel Promotes Chaffe

John C. Chaffe of the Philadelphia District Sales Office, Republic Steel Corporation, has been appointed assistant district sales manager of the Philadelphia territory, according to N. J. Clarke, Republic vice president in charge of sales. Graduating from Lehigh University in 1914, Mr. Chaffe joined A. M. Byers Company as a sales apprentice and was later assigned to the company's New York district office on promotional work. Five years later he was made district sales manager in the Byers Company Philadelphia office. In 1930 he was named vice president of the Wrought Iron Company of America, Lebanon, Pa., and joined Republic in 1931 at Philadelphia, where he specialized in tubular products.

Byers Company Appointments

Through M. J. Czarniecki, vice president in charge of sales, A. M. Byers Company, Pittsburgh, Pa., announces the appointment, effective April 15, of C. R. MacBride as manager of the Engineering Service Department. Mr. MacBride was transferred from the Boston Division sales office. He was formerly with Edgewater Steel Company.

Effective April 1, A. D. Sheere was appointed manager of the Houston Division office, according to announcement by W. J. Czarniecki, vice president of the company in charge of sales. Mr. Sheere was formerly in Atlanta, Ga., as Assistant Division Manager of the Pittsburgh Division. W. B. Simpson, formerly sales representative in the Pittsburgh Division's northern territory, has been appointed Assistant Division Manager to succeed Mr. Sheere and will be stationed in Atlanta.

Before You Buy
Investigate
AIR COMPRESSORS
by Westinghouse
AIR BRAKE CO.
Compactness, Efficiency, Economy, and Durability characterize our line of air compressors, built in many types and sizes up to 200 cu. ft.—suitable for a great variety of requirements in mill and factory. There is one in this extensive line to meet your needs . . . Write for literature and prices.
The compressor illustrated is Type "Y", two-cylinder, two-stage, air-cooled, for continuous operation against 200 lbs. pressure. Available in sizes from 3.6 to 41 cu. ft. Superior design, high grade materials, and skilled workmanship, make these machines all that a compressor outfit should be. Catalogue 2051.
WESTINGHOUSE AIR BRAKE CO.
Industrial Division - - - PITTSBURGH, PA.

TRADE LITERATURE

DRILL STEEL SHARPENER AND FURNACE—
Bulletin, Form 2176-A—illustrating and describing the Ingersoll-Rand line of rock-drill-steel sharpeners and oil furnaces, designed for use in mines, quarries, heavy construction work, etc.; includes complete descriptions of the four sizes of air operated sharpeners, the Jackrod thread-forging device, and two sizes of oil furnaces.
Ingersoll-Rand Company, 11 Broadway, New York.

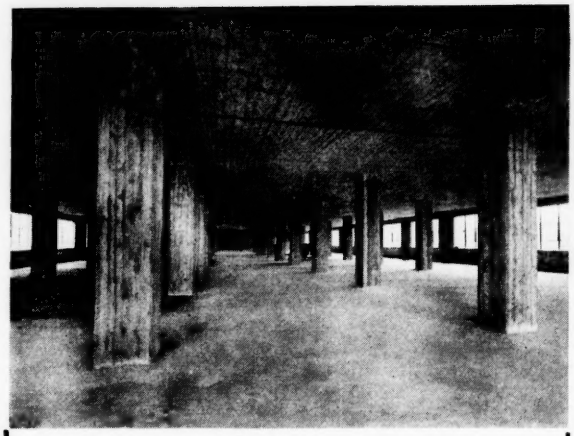
AIR CONDITIONING—
Booklet—"The Story of Air Conditioning," illustrated in Disney Cartoon style, creating four hypothetical characters to personify Temperature, Humidity, Cleanliness and Air Motion, the four elements to be controlled in air conditioning.
Air Conditioning Manufacturers' Association, Southern Building, Washington, D. C.

SAVE TIME IN OFFICE—
Booklet—"Ways to Save Time in the Office," compiled by Burroughs Adding Machine Company, being a collection of ideas based on more than 50 years' study of office methods and aid to business for the development of more efficient office procedures.
Burroughs Adding Machine Company, Detroit, Mich.

BOILERS—
Booklet—illustrated, covering Prox Sectional Boilers of header design.
Frank Prox Company, Terre Haute, Ind.

INDUSTRIAL MACHINERY—
Bulletin No. 117—"The Wisest Choice of the Wisest Buyers," devoted to used industrial power plant and construction equipment, many items of which are listed and offered in the Bulletin.
Mississippi Valley Equipment Company, 511 Locust Street, St. Louis, Mo.

CENTRIFUGAL DRYERS—
Folder—describing use of Carpenter Centrifugal Driers in industries where there are granular materials to be dried;
Leaflet—devoted to Koppers wedge wire screens for removal of free moisture from fine material.
Koppers-Rheolaveur Company, Pittsburgh, Pa.



Building No. 20—Minn. Mining & Mfg. Co, St. Paul, Minn.
Toltz, King and Day, Inc.—Engineers & Architects
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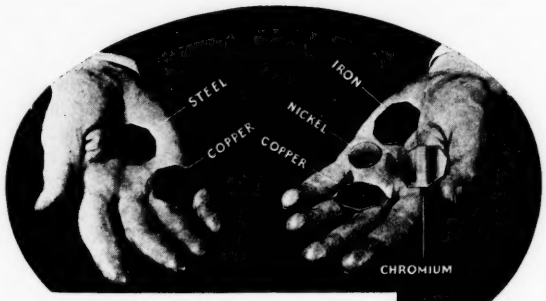
One of 3 Buildings Constructed by M. M. & M. Co.
Using "Smooth Ceilings" Floor Construction

Ceilings All Flat.
Columns May Be of Steel or Concrete.
Pipes and Ducts Readily Pass Through Floor Slab Around Columns.
Structural Steel Column Heads Embedded in Floor Slabs Replace Cumbersome Concrete Caps in this New Type Flat Slab Floor Construction

"SMOOTH CEILINGS" SYSTEM, PTD.

See Sweet's Catalogue

802 Met. Life Bldg., Minneapolis, Minn.



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Lyonore Metal is fortified against the attacks of time and weather with FOUR ELEMENTS . . . two of which are the most corrosion-resistant, semi-precious elements known to science—CHROMIUM and NICKEL. It is manufactured in one of the world's largest mills according to the exclusive formula of this 79 year old concern. Lyonore Metal lasts many years longer, yet costs you but a trifle more. Write today for details.

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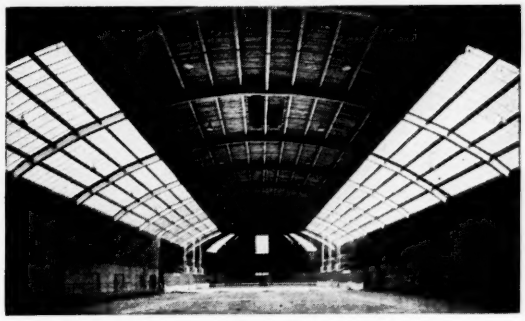

Field House, Swarthmore College, Swarthmore, Pa.
11,000 sq. ft. Actinic Corrugated Wire Glass Skylights.

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Our Engineering Service Department can aid you on your skylighting problems. Write or wire.

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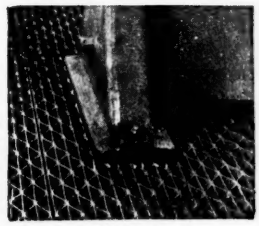
Kerlow Steel Floors



Better Floors for Safety

Kerlow industrial floors are safer and give better ventilation—made in various types 70% to 90% open—made in all riveted and rectangular designs for personal choice. Kerlow "BOLDEJ" Safety Steps are made in all grating designs. Ask for catalog.

1. *Open for Ventilation*
2. *Non-slipping*
3. *Fireproof*
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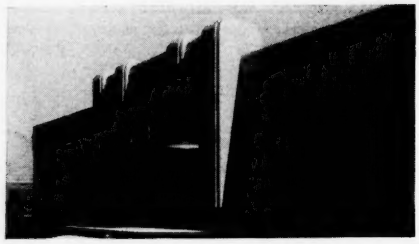
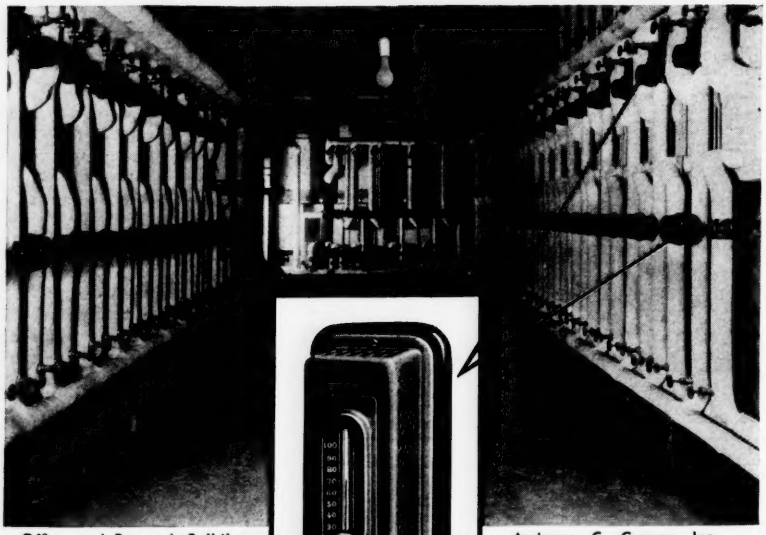
KERLOW STEEL FLOORING COMPANY
220-222 Culver Avenue Jersey City, N. J.



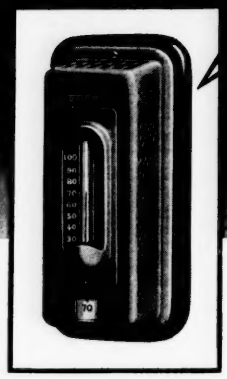
"WINDOWLESS" INDUSTRIAL BUILDING
with Complete Air Conditioning
CONTROLLED "BY JOHNSON"



Office and Research Building for National Aluminate Corp., Chicago, Illinois

Ambrose C. Cramer, Inc., Architects; Robert E. Hattis, Consulting Engineer, Chicago

THE "HEATING" CONTROLLER



THE "BRAIN" OF THE SYSTEM

THE "COOLING" CONTROLLER

Pictured above is the "control room", showing Johnson valves on the heating and cooling coils in the individual ducts which serve each room. In this windowless building, the occupants of each space determine the exact temperature which they desire. Then, each of the 61 Johnson room thermostats, the "brain" of this complete air conditioning system, calls for heating or cooling effect, automatically maintains the required temperature . . . The *adjustable sensitivity* of these Johnson "proportioning type" room thermostats is the distinctive feature. Each instrument is precisely balanced, *on the job*, with respect to the heating and cooling capacity of the units which it controls. The exact requirements of each room are met, without "hunting" or fluctuation of temperature . . . Each room thermostat controls two valves; a direct-acting, diaphragm-operated valve (the "heating" controller) for the hot water heating coil, and a reverse-acting valve (the "cooling" controller) for the cold water cooling coil. The cold water valves are "long-neck" pattern, allowing ample clearance for piping and pipe covering. When any room is up to temperature, its "heating valve" closes gradually. If complete closing does not allow the room to cool to the desired temperature, the "cooling valve" begins to open.

ALSO: JOHNSON CONTROL FOR INDUSTRIAL PROCESSES

JOHNSON SERVICE COMPANY
MILWAUKEE, WIS., AND DIRECT BRANCH OFFICES IN PRINCIPAL CITIES

Railroads Spend Millions in South Carolina Annually

(*Continued from page* 41)

$1,448,000 in 1937. In the same year thirty-eight railroads which have no mileage in the state reported purchases of $621,000 in South Carolina. If to this total of $2,108,000 were added the purchases of nineteen other railway companies operating in the state, the figure would be substantially larger.

It is interesting in this connection to note that one large Eastern railroad, having no mileage within hundreds of miles of South Carolina, spent $150,000 in the state in 1937, chiefly for forest products. Three New England railroads and railroads as far removed as the Pacific Northwest are among South Carolina's customers.

Approximately 45 cents out of every dollar which the railroads receive from the public for the transportation of passengers, freight, express and mails, are paid in wages to the 8,257 railway workers in South Carolina. The Class I railroads issue around 200,000 pay checks in South Carolina each year, and their total wage payments in the state amounted to $10,703,000 in 1937. Much of this money passes through several hands, and contributes directly or indirectly to business activity in cities, towns and communities all over the state.

Every county in South Carolina looks to the railroads for a part of its taxes. In every county, the railroads are among the leading taxpayers, while in many, they are the leading taxpayers. Railroads pay heavy taxes upon their roadways; they pay local property taxes in townships, towns and cities, together with county and state taxes. They also pay taxes for the support of schools and highways, in addition to the large sums which go to the Federal government for social security, income and other taxes.

Class I railway tax payments in South Carolina totaled $2,484,954 in 1937. The amount of taxes paid by the smaller railroads and the terminal companies operating in South Carolina is not known, but their payments probably boosted total railway taxes in the state up to around $2,700,000—not to mention personal and property taxes paid by railway employees, many of whom are home owners.

The foregoing facts point to South Carolina's important stake in her railroads and her vital interest in maintaining these railroads in a condition which will enable them to provide efficient and adequate transportation service, employ their full quota of workers, pay their taxes and make liberal purchases of South Carolina products.

CANNING MACHINERY AND SUPPLIES—General Catalog 600—more than 140 pages, covering modern canning equipment for food products, canning supplies, etc.; completely indexed.
A. K. Robins & Co., Inc., Baltimore, Md.

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BALTIMORE, MD.

Constructors and Engineers

Distributors of Sand - Gravel - Stone and Commercial Slag

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Our complete organization with years of experience in successfully executing large construction contracts of various kinds is prepared to undertake the construction of earth, masonry and concrete dams, drydocks, dredging of all kinds, river and harbor improvements, deepening channels, hydraulic filling and rock work, tunnels, railroad construction, sewers and waterways.

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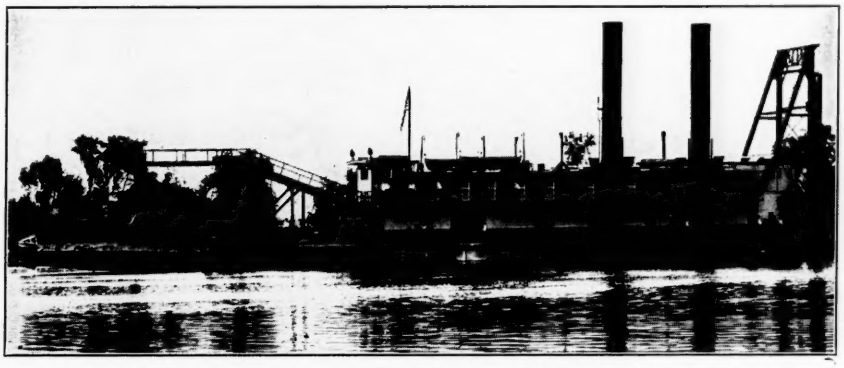
FILLING, LAND RECLAMATION, CANALS, PORT WORKS

RIVER AND HARBOR IMPROVEMENTS—DEEP WATERWAYS AND SHIP CHANNELS



We are especially equipped to execute all kinds of dredging, reclamation and port works in Southern waters.
Correspondence invited from corporate and private interests everywhere.

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NEW YORK: 15 Park Row HOUSTON, TEXAS: Scanlan Building

● "Pozzolith has been very satisfactory" report Boyd & Goforth, Inc., Engineers, Charlotte, N. C. "It was used at Valdese, N. C. in the 200,000 gallon reinforced concrete clear well, and in all concrete for the 500,000 gallon per day water purification plant.

"We reduced the water ratio . . . The workability of the concrete with Pozzolith was far superior . . . The 200,000 gallon reservoir was poured one day and the forms stripped the next afternoon . . . In approximately 4500 square feet of exposed concrete surface, not one square inch of honeycomb was found."

Boyd & Goforth's statement is typical of many job case histories that report exceptionally fine results with Pozzolith. Send for facts that will help on your jobs.

PROOF OF EXTRA DURABILITY

Pozzolith concrete is durable concrete! 200 cycles of freezing and thawing prove the greater durability imparted to concrete by Pozzolith. Pozzolith concrete lost only 2% in weight . . . plain concrete lost 22.9%!

Send for full information to

THE MASTER BUILDERS COMPANY
Cleveland, Ohio

In Canada: THE MASTER BUILDERS Co., Ltd.
Toronto, Ontario

MASTER BUILDERS

Alabama Cement Plant Rebuilt

(*Continued from page* 39)

which separate material fine enough to pass through a sieve with 400 meshes to the square inch from the coarser material. The coarse fraction is returned to the mill for further grinding and the finer fraction flows into bowl classifiers which separate and remove material fine enough to pass a sieve with 40,000 openings to the square inch. The oversize is carried up an incline by a mechanical raking system into secondary grinding mills similar to the preliminary mills except that the steel grinding balls are smaller. The product of the mills is returned to the bowl classifiers. The finished slurry from the classifiers is pumped to two thickeners.

The thickeners are circular concrete basins 200 feet in diameter with a depth of 10 feet at the wall and 20 feet at the center. Structural steel arms fitted with diagonally placed scraper blades at the bottom edge and suspended from a center pier are rotated slowly by electric motors. The solids settle to the bottom and are raked to delivery pipes at the center by the revolving arms and the water overflows into a circular trough at the periphery. The slurry entering a thickener contains about 87 per cent water and this is reduced by the thickener to about 36 per cent.

The thickened slurry is pumped to storage tanks under the kilns from which it is pumped to the kiln feeders. There are two kilns, each 10 feet in diameter by 300 feet long. Each is carried by five tires resting on forged steel rollers 42 inches in diameter. Pulverized coal is introduced into the discharge end of the kilns from individual grinding mills in which the coal is dried as it is being ground by a current of warm air taken from around the hot brickwork of the clinker cooler. The stream of slurry fed into the kiln meets the hot gases from the combustion of the pulverized coal, the moisture is evaporated, the limestone is calcined and finally, near the discharge end of the kiln, the materials combine to form cement clinker. Two of the kilns from the old plant are being retained for use whenever conditions make it desirable.

The clinker passes from the kilns into two air-quenching clinker coolers. The temperature of the clinker as it enters the cooler is about 2600° F. It leaves the coolers at a temperature of about 100° F. The clinker is elevated from the coolers into a storage in a reinforced-concrete building 100 feet wide by 288 feet long of construction similar to the raw-material storage and equipped with crane and bucket which are duplicates of the raw-material crane and bucket. A bin for gypsum is provided at one end of the clinker storage building. The gypsum which is required in the ratio of about one pound per 25 pounds of clinker is received by railroad from the company's quarry at Watonga, Oklahoma, and it is unloaded by a mechanically operated scraper and elevated into the storage bin. Clinker and gypsum are transferred from the storage into concrete hoppers at one side of the building and after proportioning on automatic scales the mixture of clinker and gypsum is ground in two duplicate units in the mill building. Each unit consists of a ball mill 9 feet diameter by 8½ feet long and a tube mill 8 feet diameter by 30 feet long. The clinker and gypsum are first ground in the ball mill and the mill product is elevated and fed into one end of the two-compartment tube mill and discharged at the center. The product of the first compartment is elevated to a mechanical air separator which returns the oversize material to the first compartment for further grinding and delivers the fine material to a second compartment. The product of the second compartment is elevated to a second air separator from which the oversize is returned to the mill for further grinding and the fine material which is finished cement is pumped to the storage tanks.

The cement storages are reinforced-concrete silos with a total capacity of 225,000 barrels of cement. The cement is drawn from the bottom of the silos by screw conveyors and is packed or loaded for bulk shipment as may be required by the customers.

In addition to the producing units, the new construction included an office and laboratory building and a shop and storeroom building. These buildings are architectural concrete and were designed by Warren, Knight, and Davis, Birmingham architects. The office and laboratories are completely air conditioned, all air, both winter and summer, being filtered and tempered and delivered to the offices through a system of ducts.

The only equipment of the original plant which is now in use is one of the cement storage buildings and two of the kilns which are being retained.

Newsprint Imports Valued at $101,455,671 in 1938

Imports of standard newsprint paper into the United States during 1938 totaled 4,549,206,330 pounds valued at $101,455,671 compared with 6,634,048,120 pounds valued at $122,539,421 in 1937, according to the Forest Products Division, Department of Commerce.

Smaller imports of newsprint paper during 1938 compared with 1937 were accounted for in part by the large purchases by publishers in the fourth quarter of 1937, occasioned by the price prevailing during that period.

Canada was the principal source of origin of standard newsprint paper imported during 1938 and accounted for 3,926,872,788 pounds of the total. Finland furnished 302,267,856 pounds; Sweden, 143,108,380 pounds; Newfoundland and Labrador, 136,241,114 pounds; and 753,578 pounds were imported from all other sources.

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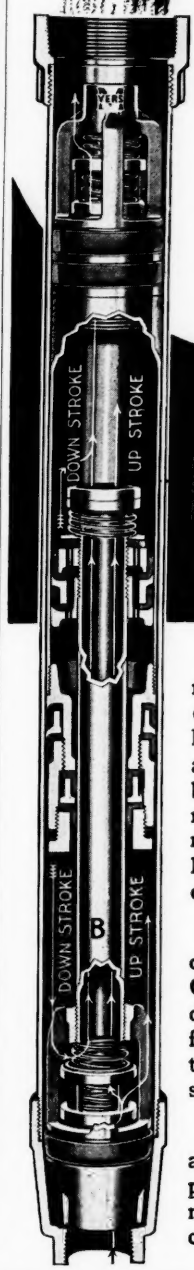

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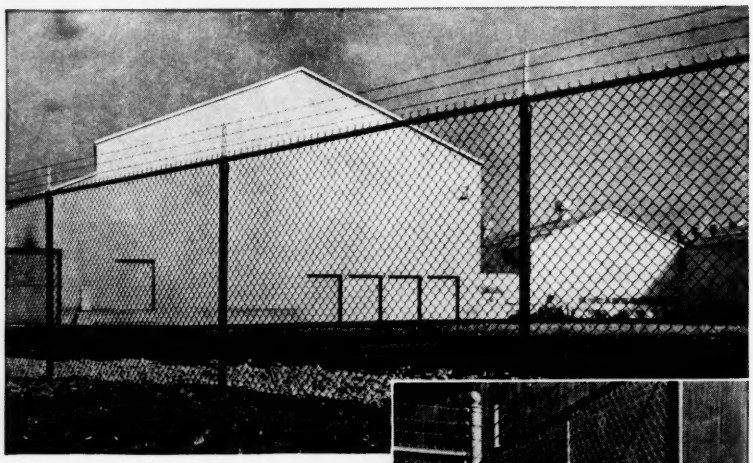
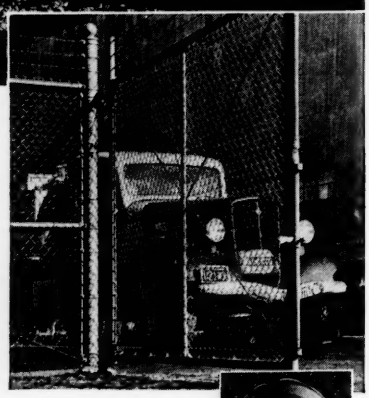
How to Choose the Right Fence

FOR YOUR BUSINESS PROPERTY





YOU want a sturdy fence that will safely guard every foot of your property line . . . one that looks well, will last for years and not require costly repairs. There's no economy in leaving your property an easy prey for thieves and marauders.

But, what is the *right* fence? How to choose it? Much depends on your type of property and many other factors. Our free book on fence will help you select the most practical fence for your needs. This 32-page book illustrates 14 different kinds of fence—tells you what kind you need for business, playground, school or residential property. Tells you how to get fence with rails that won't buckle—gates that won't drag or slip—how to get extra protection against rust with fence that is galvanized *after* weaving.

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Now you can be sure of the quality of fence before you buy it. Cyclone Fence with the "12M" label has an extra-heavy coat of galvanizing that resists rust and makes the fence last longer. Be sure that the "12M" label is on the fence you buy.

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UNITED STATES STEEL

A Proposed Infringement of Individual and States' Rights

(*Continued from page* 33)

dividual State might hope to escape its devastating blight. Indeed, it would be a very definite step in the direction of those dictatorial and confiscatory proceedings which we, as a nation, condemn in certain other nations.

Just at this time our oil companies are seeking an adjustment of their claims against the Mexican government for the expropriation of their properties. I dare say that our own government is in sympathy with the efforts of a group of our citizens to salvage some of their losses, but its attention may well be directed to the mote that now threatens its own eye.

I might add that I am in sympathy with the apparent objective of the Navy Department, which is to prevent the further depletion of the California petroleum reserves and insure a stock of oil against the contingency of war. But the end does not always justify the means. There would be fully as much justice in the seizure of the United States Steel Corporation and all of its assets, at a sacrifice of the stockholders, because of the vital importance of steel as an instrument of war.

I do not say that such confiscation would not be justified as a war expedient, or that it would not be justified as part of a government program of national defense, but in any event the rights of the individual and of the States should be recognized.

If we are to have expropriation, or confiscation, it should be recognized as such, with whatever compensatory measures that may be duly established in law and equity, and not come in the guise of a judicial act to establish the proprietory interest of the Federal government at the expense of a partial or segregated section of its own people.

By-Products of Southern Pine

(*Continued from page* 40)

operating capacity for treating over 3600 tons of waste a day, requiring stumps, etc., from over a quarter of a million acres a year and producing at least nearly one-third of the naval stores in the United States.

SHEAVES—
Bulletin No. 1261-B—illustrating and describing Vari-Pitch Texrope Sheaves, covering the stationary control type for occasional changes of speed and the motion control type for use where frequent speed changes are necessary; includes dimension sheets, etc.
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● For lint cleaning—removing short fibers from cotton carding machines—and any other vacuum pump service, the new Gardner-Denver dry vacuum pump will assure uninterrupted service with the utmost in economy. *Horsepower requirements are unusually low,* owing to the extremely large valve areas. Power costs are consequently at a minimum in furnishing the low vacua required during regular operation. However, where high vacua are desired, the RXV, arranged for two-stage operation, will produce above 28" Hg.

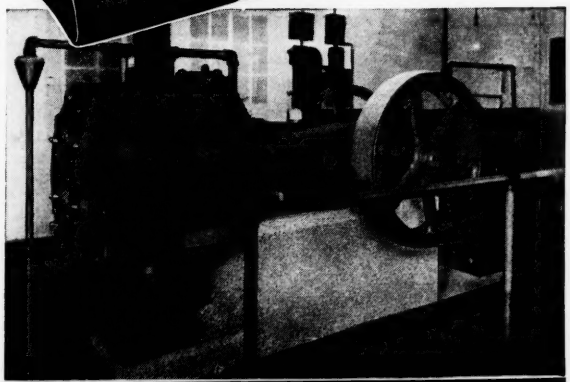
Designed especially for heavy-duty, continuous service, Gardner-Denver "RXV" dry vacuum pumps deserve investigation by textile mill and other industrial operators who wish to increase efficiency and reduce costs. Write for Bulletin RXV-10 giving complete information! Gardner-Denver Co., Quincy, Ill.

Features of new Gardner-Denver "RXV" Horizontal Single Cylinder Dry Vacuum Pumps

- Large valves reduce horsepower cost substantially.
- Duo-plate "cushioned" automatic plate valves—light, efficient, durable—become tighter with use.
- Discharge valve areas equal to that of suction valve areas.
- Gardner-Denver special pressure-tight, alloy iron vacuum cylinder—close grained—high in tensile strength.
- Suitably water-jacketed cylinders and heads.

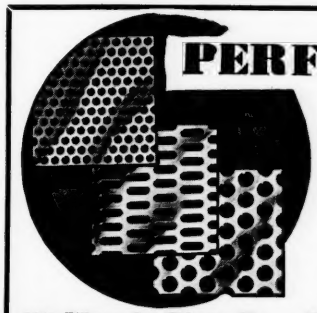
Branch Offices: Atlanta, Ga. • Birmingham, Ala. Knoxville, Tenn. • Dallas, Texas • Houston, Texas Washington, D. C.

Gardner - Denver "RXV" Single-Stage Horizontal Dry Vacuum Pump



GARDNER-DENVER

80th ANNIVERSARY YEAR



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Manufacturers of Miteo Open Steel Flooring. Miteo Shur-Site Treads and Miteo Armorgrids.

The First Annual Southern Paper Festival

(*Continued from page* 36)

Company.

At the Southern States Pulp and Paper Club luncheon, there was a large gathering including Mrs. J. H. Land, whose husband was superintendent of the paper mill at Marietta, Georgia, when about 1890, Mrs. Land says, Southern pines were one day cut down in the early morning and converted into newsprint on which the Atlanta evening papers were printed the same day.

The principal speaker at the luncheon was a man long associated with the pulp and paper industry, Mr. D. Clark Everest, president of the American Pulp and Paper Association, and still retaining among his various offices the vice-presidency of the Masonite Corporation of Laurel, Miss. After paying tribute to the excellence of the present pulp and paper industry development in the South, Mr. Everest said there is no physical reason why any kind of a paper mill cannot be constructed anywhere in the South, but there is a question as to "whether this development will go forward in an orderly manner, keeping pace with increasing use or if we are to have waves of building activity every time there is a hump in general business activity. Unless there is some careful study made as to the need for increased production before additional plants are built, this industry will not prove successful from a financial standpoint."

"During the last twelve years," continued Mr. Everest, "the South has taken its position as the great dominating influence in Kraft paper and board. It will undoubtedly go further in other lines. There is no question about bleached sulphate, either from pines or hardwoods, securing a place in the paper industry. It is bound to come. The development along that line is in the hands of people familiar with the manufacture of bleached paper, and they know where they are going and what they are trying to accomplish. The one point I wish to make in relation to future expansion in Kraft paper and board is that the South now has not only reached the dominating position in the industry, but it has also reached a vulnerable position in the industry. I have heard recently statements to the effect that there is room for forty more Kraft mills in the South. Sure, there is probably room for 140 more mills if you are merely considering mill sites or places to build them. Is there a market for the output of one more mill of the capacity of those recently built? Has the market absorbed the productive capacity of those already built? With the addition of other plants will the South continue to occupy its present fine economic position? Will there be cross hauling of wood supplies? From now on, as I see it, anything which affects the Kraft paper and board industry adversely will have its greatest effect in the South where the greatest amount is produced—I assume we are all in business to make a return on our investments, and unless these companies which have pioneered the development in the South continue to operate at a decent profit, they will not, over a long period of time, contribute much to the South."

"The South is becoming a great industrial center not only in pulp and paper, but in scores of other lines. These plants must be successful, and I mean from a profit standpoint, or they will not continue."

As to what must be done for the future, Mr. Everest urged the prosecution of two constructive measures. One, conservation for the perpetuation of our forest supplies and in this connection pointed out that "we have had too many instances of forced cutting to avoid taxation. You have opportunity here, due to your growing conditions, to correct any mistakes in taxing policy which may have been made in the past, which now is not true in many other sections of the country." And two, the necessity of research in new uses for paper and paper board.

"GIVE A LIFT?" CERTAINLY!

• • • by handling all your loads with Elwell-Parkers: Destroy Waste—Stop Losses—Step Up Profits

Certainly! When this Elwell-Parker stops tiering bags for a big Western chemical company, *the warehouse will be tight-full.* That's *certainly* "giving a lift" to your loads with a vengeance—*and to your profits, too:*

Because, with Elwell-Parkers you replace slow, costly methods with fast, efficient ones; hustle big loads instead of dragging them; keep aisles clear and warehouses chock-full; supplant hazard with safety every moment of operation.

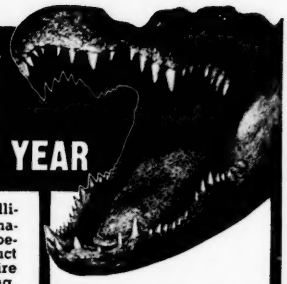
Certainly! Elwell-Parker, with 33 years' outstanding engineering experience, brings you not only modern improvements but modern ideas for big money-savings. Write or *Wire Collect* today.

The Elwell-Parker Electric Company, 4238 St. Clair Ave., Cleveland, Ohio.

ELWELL-PARKER *Power Industrial* TRUCKS

ESTABLISHED 1893 • BUILDING POWER INDUSTRIAL TRUCKS SINCE 1906

30 years old and getting TOUGHER EVERY YEAR



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Since then more than 200 million belts have been laced with Alligator and there has been a world wide flood of imitations. But the original, old reliable Alligator Steel Belt Lacing has been getting tougher every year.

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Compression grip protects belt ends
Smooth on both faces
Embeds in belt
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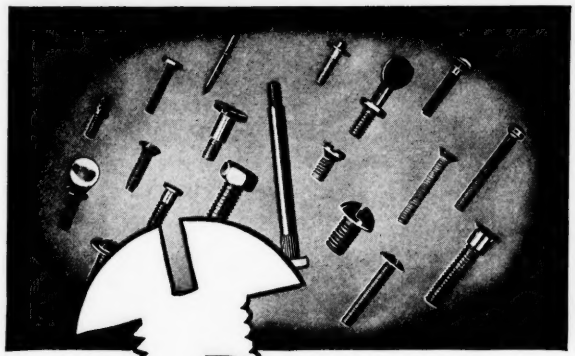
Joint easily separated

WRITE TODAY for 72 page pocket size manual on how to care for belts entitled "Short Cuts to Power Transmission."



PROTECT your product — and reduce costs — at every point where fastening devices are required by using screws and headed parts by PROGRESSIVE. Let PROGRESSIVE items, produced efficiently and accurately by the cold upset process, show you the way to substantial savings both in original costs and in assembly operations. In addition to standard machine screws and nuts, PROGRESSIVE is equipped to meet demands for made-to-order parts in any metal. We invite you to submit your problems to PROGRESSIVE specialists for intelligent, prompt solution.

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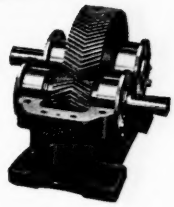
SINGLE! DOUBLE! TRIPLE!

—every type of Herringbone Speed Reducer that you might need

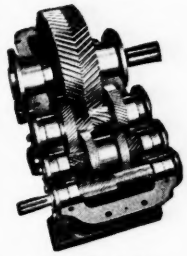
JONES Herringbone Gear Speed Reducers are built in a wide range of ratios and ratings to cover every requirement. Single (Type SH) reducers in standard ratios range from 1.25 to 1 up to 11 to 1 in ratings from 1.3 to 440 H.P. Double (Type DH) reducers are built in standard ratios from 10.9 to 1 up to 72 to 1 in ratings from 0.5 to 275 H.P. The triple reduction reducers (Type TH) cover a range of ratios from 86.9 to 1 up to 355.8 to 1 in ratings from 0.3 to 78 H.P.

All these reducers have heat treated gears, ground shafts and are mounted with anti-friction bearings throughout. Cast iron bases are available for all variations of motor assembly. Liberal stocks are carried to facilitate shipments.



Single Reduction
Type SH

Double Reduction
Type DH



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Type TH

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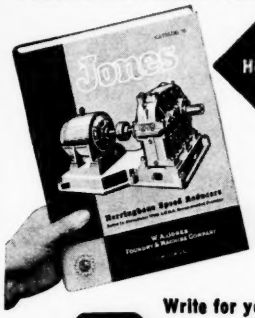

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about the application of Herringbone Reducers

This new 128-page catalog of Jones Herringbone Reducers presents a vast amount of data relating to Herringbone Reduction Units. Illustrations show a broad range of herringbone reducer applications and the technical information shows how to select reducers for all conditions of service in accordance with the A.G.M.A. recommended practice.

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CUT AND MOLDED TOOTH GEARS — V-BELT SHEAVES
ANTI-FRICTION PILLOW BLOCKS — PULLEYS
FRICTION CLUTCHES AND TRANSMISSION APPLIANCES

"What Helps Business Helps You"

(*Continued from page* 48)

whenever there's a new idea: namely—it can't be done. They said that no one had ever been able to build a dam across the Tennessee River; in fact, no one had ever tried to; the river was too big, too treacherous; even if the engineer was able to build the dam, it wouldn't hold water because the river bottom was full of holes, and the water would run out of these holes into great caves and through subterranean passages under the dam.

"Nevertheless, the engineer believed it could be done. But it would cost $15,000,000. That was a lot of money, and none of his local friends wanted to risk it. Fortunately, however, there were men from the financial center of New York who listened to this man and finally raised the money that he needed.

"That was the beginning of the Tennessee Electric Power Company. In 1914 it had 15,000 customers and charged an average rate of approximately 10 cents per kilowatt hour. In 1938 it had 124,000 customers and was charging an average rate of 2¾ cents an hour. It had one of the lowest rates in the country.

"We felt very badly, therefore, when we had to sell this company to the government. It was a good company. It was the kind of efficient low-cost, progressive enterprise of which Americans are proud. But it could not compete with the United States Government through the TVA, which does not have to operate at a profit, but which can subsidize its losses with the taxpayers money.

"I tell this story because it is an illustration of government forcing a business to shut down instead of encouraging it to expand. And, of course, this has an immediate effect upon business generally. Other business men see this government competition and wonder what is going to happen to *their* company; perhaps they decided not to build that new plant which they had proposed. And the investor witnesses it and wonders what is going to happen to his investment; perhaps he decides he better not put any more money into that business. Thus, the conditions needed for successful business — namely, the business man seeking to expand his business and the investor willing to supply the capital—are lacking.

"Industry today is afraid of government competition. It is afraid of taxation and destructive regulation by Federal bureaus in Washington. It has what the Secretary of the Treasury has defined as a 'what's the use' attitude, holding it back from normal business risks."

March Industrial Machinery Exports 17 Per Cent Above A Year Ago

Industrial machinery exports from the United States in March were valued at $29,594,195, an increase of 17 per cent over the March 1938 trade valued at $25,223,324, according to the Machinery Division, Department of Commerce.

Exports of power-driven metal-working machinery reached the record volume of $12,057,012 in March, 45 per cent greater than the corresponding shipments in 1938 aggregating $8,297,396. Continued large shipments to Russia, Japan, and the United Kingdom, plus sharply increased shipments to France, were primarily responsible for the high level reached by this trade during the month. Over 80 per cent of the March exports went to these 4 countries.

The March 1939 and March 1938 export valuations for the types in which important gains were registered during the month, are as follows: Lathes, $1,349,533 against $1,187,508 a year ago; vertical boring mills and chucking machines, $713,161—$309,249; milling machines, $2,425,253—$1,071,864; gear cutting machines, $486,165—$239,185; drilling machines (except vertical and radial), $407,601—$80,022; planers and shapers, $379,707—$215,393; grinding machines, $2,007,524—$1,480,343; and forging machinery, $615,961—$331,784.

Valued at $2,099,629, U. S. exports of power-generating equipment, except electric and automotive, increased 40 per cent over the March 1938 trade amounting to $1,497,312.

March shipments abroad of all other types of industrial machinery were valued at $5,305,317, or 20 per cent greater than the trade a year ago valued at $4,403,077. The important gains included sugar mill machinery, $238,646—$139,007; blowers and ventilating equipment, $187,752—$53,430; ice-making equipment, $100,557—$66,065; and air conditioning equipment, $268,517—$204,927.

Illinois Central Appointments

Following a meeting of the Illinois Central Board of directors, it was announced that Fred H. Law will be vice-president in charge of traffic as of May 1, succeeding Charles C. Cameron, who will retire after forty-five years of service.

Other changes in the traffic department effective May 1 were:

Roy E. Barr, assistant traffic manager, will be freight traffic manager in charge of commercial work, with office at Chicago.

William Haywood, freight traffic manager, will be freight traffic manager in charge of solicitation work, with office at Chicago.

Joseph L. Sheppard, assistant traffic manager at St. Louis, will be freight traffic manager in charge of rate mafters, with office at Chicago.

Robert A. Trovillion, general freight agent at Chicago, will be assistant freight traffic manager at Chicago.

Ernest J. Carr, general traffic agent at Birmingham, will be assistant traffic manager at St. Louis, succeeding Mr. Sheppard.

Willis L. Reeves, general freight agent at Memphis, will be general freight agent at Chicago, succeeding Mr. Trovillion.

Robert W. Quindley, assistant general freight agent at Memphis, will be general freight agent at Memphis, succeeding Mr. Reeves.

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